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|--|--|--|--|--|--|--|--|
| SOLICITATION/CONTRACT/ORDER FOR COMMERCIAL ITEMS<br>OFFEROR TO COMPLETE BLOCKS 12, 17, 23, 24, & 30  |  |  |  | 1. REQUISITION NUMBER<br>See Schedule  |  | PAGE OF<br>1 3   |  |
| 2. CONTRACT NO.<br>EP-W-16-015   |  | 3. AWARD/ EFFECTIVE DATE   |  | 4. ORDER NUMBER<br>1010  |  | 5. SOLICITATION NUMBER   |  |
| 7. FOR SOLICITATION INFORMATION CALL:   |  | a. NAME<br>Michael Fox   |  | b. TELEPHONE NUMBER (No collect calls)<br>202-564-2550   |  | 8. OFFER DUE DATE/LOCAL TIME<br>ET   |  |
| 9. ISSUED BY<br>HPD<br>US Environmental Protection Agency<br>William Jefferson Clinton Building<br>1200 Pennsylvania Avenue, N. W.<br>Mail Code: 3803R<br>Washington DC 20460  |  |  |  | 10. THIS ACQUISITION IS <input checked="" type="checkbox"/> UNRESTRICTED OR <input type="checkbox"/> SET ASIDE: % FOR:<br><br><input type="checkbox"/> SMALL BUSINESS <input type="checkbox"/> WOMEN-OWNED SMALL BUSINESS<br><input type="checkbox"/> HUBZONE SMALL BUSINESS <input type="checkbox"/> (WOSB) ELIGIBLE UNDER THE WOMEN-OWNED SMALL BUSINESS PROGRAM NAICS: 541620<br><input type="checkbox"/> SERVICE-DISABLED VETERAN-OWNED SMALL BUSINESS <input type="checkbox"/> 8(A) SIZE STANDARD: \$15.0 |  |  |  |
| 11. DELIVERY FOR FOB DESTINATION UNLESS BLOCK IS MARKED<br><input type="checkbox"/> SEE SCHEDULE   |  | 12. DISCOUNT TERMS   |  | 13a. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700)  |  | 13b. RATING  |  |
| 15. DELIVER TO<br>OAR/OAP<br>US Environmental Protection Agency<br>1200 Pennsylvania Avenue NW<br>Mail Code: 62101J<br>OAR/OAP<br>Washington DC 20460  |  |  |  | 16. ADMINISTERED BY<br>HPD<br>US Environmental Protection Agency<br>William Jefferson Clinton Building<br>1200 Pennsylvania Avenue, N. W.<br>Mail Code: 3803R<br>Washington DC 20460   |  |  |  |
| 17a. CONTRACTOR/ OFFEROR<br>AMEC ENVIRONMENT & INFRASTRUCTURE, INC.<br>Attn: LISA DWYER<br>AMEC FOSTER WHEELER ENVIRONMENT & I<br>751 ARBOR WAY, STE 180<br>BLUE BELL PA 194221960<br><br>(b)(4)   |  | 17b. CONTRACTOR/ OFFEROR<br>RTP Finance Center<br>US Environmental Protection Agency<br>RTP-Finance Center (AA216-01)<br>109 TW Alexander Drive<br>www2.epa.gov/financial/contracts<br>Durham NC 27711 |  | 18a. PAYMENT WILL BE MADE BY<br>RTP FMC  |  | 18b. SUBMIT INVOICES TO ADDRESS SHOWN IN BLOCK 18a UNLESS BLOCK BELOW IS CHECKED <input type="checkbox"/> SEE ADDENDUM |  |
| 19. ITEM NO.   |  | 20. SCHEDULE OF SUPPLIES/SERVICES  |  | 21. QUANTITY   |  | 22. UNIT   |  |
| 23. UNIT PRICE   |  | 24. AMOUNT   |  | 25. ACCOUNTING AND APPROPRIATION DATA<br>See schedule  |  | 26. TOTAL AWARD AMOUNT (For Govt. Use Only)<br>\$169,754.00  |  |
| 27a. SOLICITATION INCORPORATES BY REFERENCE FAR 52.212-1, 52.212-4, FAR 52.212-3 AND 52.212-5 ARE ATTACHED. ADDENDA <input type="checkbox"/> ARE <input type="checkbox"/> ARE NOT ATTACHED.  |  |  |  | 27b. CONTRACT/PURCHASE ORDER INCORPORATES BY REFERENCE FAR 52.212-4, FAR 52.212-5 IS ATTACHED. ADDENDA <input type="checkbox"/> ARE <input checked="" type="checkbox"/> ARE NOT ATTACHED.  |  |  |  |
| 28. CONTRACTOR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN 1 COPIES TO ISSUING OFFICE. CONTRACTOR AGREES TO FURNISH AND DELIVER ALL ITEMS SET FORTH OR OTHERWISE IDENTIFIED ABOVE AND ON ANY ADDITIONAL SHEETS SUBJECT TO THE TERMS AND CONDITIONS SPECIFIED. |  |  |  | 29. AWARD OF CONTRACT: DATED YOUR OFFER ON SOLICITATION (BLOCK 5), INCLUDING ANY ADDITIONS OR CHANGES WHICH ARE SET FORTH HEREIN, IS ACCEPTED AS TO ITEMS:   |  |  |  |
| 30a. SIGNATURE OF OFFEROR/CONTRACTOR<br>K. Howell  |  |  |  | 31a. UNITED STATES OF AMERICA (SIGNATURE OF CONTRACTING OFFICER)<br>Michael Fox  |  |  |  |
| 30b. NAME AND TITLE OF SIGNER (Type or print)<br>Kemp Howell - Project Manager   |  |  |  | 30c. DATE SIGNED<br>6/27/17  |  |  |  |
| 31b. NAME OF CONTRACTING OFFICER (Type or print)<br>Michael C. Fox   |  |  |  | 31c. DATE SIGNED<br>06/27/2017   |  |  |  |

| 19.<br>ITEM NO. | 20.<br>SCHEDULE OF SUPPLIES/SERVICES   | 21.<br>QUANTITY | 22.<br>UNIT | 23.<br>UNIT PRICE | 24.<br>AMOUNT |
|-----------------|--|-----------------|-------------|-------------------|---------------|
| 0001            | <p>\$169,754.00.</p> <p>This is a Time-and-Materials (T&amp;M) task order with a total ceiling price of \$169,754.00, which the Contractor is not authorized to exceed. The Contractor exceeds at its own risk.</p> <p>The total obligated/funded ceiling amount for this order is currently \$100,000.00. This order is incrementally funded as detailed in Attachment B Summary of Amounts and Ceilings and Attachment B is hereby incorporated (1 page).</p> <p>Contracting Officer's Representative (COR) for this task order:<br/>Melissa Puchalski, (202) 343-9882,<br/>Puchalski.Melissa@epa.gov</p> <p>Alternate COR:<br/>Ralph Baumgardner, (202) 919-541-4625,<br/>Baumgardner.Ralph@epa.gov</p> <p>The services of this order are for severable.<br/>TOCOR: Melissa Puchalski<br/>Period of Performance: 07/09/2017 to 07/08/2018</p> <p>Supplemental Monitoring Studies at CASTNET Sites in Support of the NOx SOx Secondary Standard<br/>Requisition No: PR-OAR-17-00917, PR-OAR-17-01226<br/>Continued ...</p> |                 |             |                   |               |

32a. QUANTITY IN COLUMN 21 HAS BEEN

☐ RECEIVED    ☐ INSPECTED    ☐ ACCEPTED, AND CONFORMS TO THE CONTRACT, EXCEPT AS NOTED: \_\_\_\_\_

|   |                        |                                      |   |                       |
|---|------------------------|--------------------------------------|---|-----------------------|
| 32b. SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE          |                        | 32c. DATE                            | 32d. PRINTED NAME AND TITLE OF AUTHORIZED GOVERNMENT REPRESENTATIVE                               |                       |
| 32e. MAILING ADDRESS OF AUTHORIZED GOVERNMENT REPRESENTATIVE    |                        |                                      | 32f. TELEPHONE NUMBER OF AUTHORIZED GOVERNMENT REPRESENTATIVE                                     |                       |
|   |                        |                                      | 32g. E-MAIL OF AUTHORIZED GOVERNMENT REPRESENTATIVE   |                       |
| 33. SHIP NUMBER   | 34. VOUCHER NUMBER     | 35. AMOUNT VERIFIED<br>CORRECT FOR   | 36. PAYMENT   | 37. CHECK NUMBER      |
| <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL |                        |                                      | <input type="checkbox"/> COMPLETE <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL |                       |
| 38. S/R ACCOUNT NUMBER  | 39. S/R VOUCHER NUMBER | 40. PAID BY                          |   |                       |
| 41a. I CERTIFY THIS ACCOUNT IS CORRECT AND PROPER FOR PAYMENT   |                        | 42a. RECEIVED BY ( <i>Print</i> )    |   |                       |
| 41b. SIGNATURE AND TITLE OF CERTIFYING OFFICER                  |                        | 42b. RECEIVED AT ( <i>Location</i> ) |   |                       |
|   |                        | 42c. DATE REC'D (YY/MM/DD)           |   | 42d. TOTAL CONTAINERS |

NAME OF OFFEROR OR CONTRACTOR  
AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

| ITEM NO.<br>(A) | SUPPLIES/SERVICES<br>(B)   | QUANTITY<br>(C) | UNIT<br>(D) | UNIT PRICE<br>(E) | AMOUNT<br>(F) |
|-----------------|--|-----------------|-------------|-------------------|---------------|
|                 | Accounting Info:<br>17-18-C-58D5-102A45-2505-1758DC7070-001 BFY: 17<br>EFY: 18 Fund: C Budget Org: 58D5 Program (PRC):<br>102A45 Budget (BOC): 2505 DCN - Line ID:<br>1758DC7070-001<br>Funding Flag: Partial<br>Funded: \$50,000.00<br>Accounting Info:<br>17-18-C-58D5-102A45-2505-1758DC7095-001 BFY: 17<br>EFY: 18 Fund: C Budget Org: 58D5 Program (PRC):<br>102A45 Budget (BOC): 2505 DCN - Line ID:<br>1758DC7095-001<br>Funding Flag: Partial<br>Funded: \$50,000.00 |                 |             |                   |               |

# **ATTACHMENT A**

## **STATEMENT OF WORK**

**Title:** Supplemental Monitoring Studies at CASTNET Sites in Support of the NO<sub>x</sub>/SO<sub>x</sub> Secondary Standard

**Contractor:** Amec Foster Wheeler

**Contract #:** EP-W-16-015

**Task Order #:** 1010

**Period of Performance:** 7/9/2017 to 7/8/2018

### **EPA Key Personnel**

#### **Task Order Project Officer (TOPO)/Contract Level Project Officer (PO):**

Melissa Puchalski

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#### **Contracting Officer (CO):**

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Contracting Officer

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Washington DC 20460

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*email:* fox.michael@epa.gov



## STATEMENT OF WORK

### I. INTRODUCTION

The Clean Air Status and Trends Network (CASTNET) is a long-term environmental monitoring network that measures changes in ambient air quality and assesses atmospheric deposition over broad geographic regions of the U.S. (<https://www.epa.gov/castnet>). Operating since 1987, CASTNET has evolved into a robust regional monitoring program which currently consists of approximately 95 monitoring stations nationwide. The Environmental Protection Agency (EPA) coordinates the operation of the network in cooperation with numerous federal, tribal, state and local partners.

The primary monitoring objectives of CASTNET are to:

- Provide high quality data on atmospheric deposition, rural ground level ozone and other forms of atmospheric pollution;
- Support the primary and secondary ozone NAAQS and provide data on NAAQS compliance in rural areas;
- Monitor the status and trends in regional air quality and atmospheric deposition;
- Assess and report on geographic patterns and long-term, temporal trends in ambient air pollution and atmospheric deposition;
- Improve our understanding of PM and ozone formation;
- Validate and improve atmospheric models;
- Provide data for health-based research and epidemiology studies;
- Assess the effectiveness of EPA's emission reduction programs; and
- Support science and ecosystem studies.

CASTNET sites measure weekly average concentrations of sulfate ( $\text{SO}_4^{2-}$ ), nitrate ( $\text{NO}_3^-$ ), ammonium ( $\text{NH}_4^+$ ), sulfur dioxide ( $\text{SO}_2$ ), nitric acid ( $\text{HNO}_3$ ), chloride ( $\text{Cl}^-$ ) and the base cations ( $\text{Na}^+$ ,  $\text{K}^+$ ,  $\text{Mg}^{2+}$  and  $\text{Ca}^{2+}$ ) using a 3-stage filter pack. In addition, each site may make ancillary measurements, including hourly ozone ( $\text{O}_3$ ), hourly meteorology, ammonia ( $\text{NH}_3$ ) gas using passive devices, and trace-level gases. Trace-level gas monitors include reactive oxidized nitrogen ( $\text{NO}_y$ ), nitric oxide ( $\text{NO}$ ), sulfur dioxide ( $\text{SO}_2$ ) and carbon monoxide ( $\text{CO}$ ). CASTNET  $\text{O}_3$ , meteorological, and trace gas measurements follow the requirements in the Code of Federal Regulations (CFR) and EPA's Quality Assurance Handbook.

### II. PURPOSE

The primary purpose of this task order is to improve the science and understanding of deposition process within the atmosphere. The EPA is currently evaluating the secondary National Ambient Air Quality Standard (NAAQS) for  $\text{NO}_x$  and  $\text{SO}_x$ . The work under this task will enhance the existing research currently available on direct deposition methods, atmospheric chemical processes that drive deposition parameters and estimates of sulfur and nitrogen loading to various landscapes. This research is a collaborative effort between EPA's Office of Air and Radiation (OAR), the Office of Research and Development (ORD), and other federal partners. This is a follow-on task order from the base period.

Under this task order the contractor will continue to operate the enhanced  $\text{NO}_y$  analyzer at the Duke Forest flux tower site located in North Carolina. The enhanced  $\text{NO}_y$  analyzer will operate at the Duke Forest tower site through June 2018.

Also under this task order, the contractor continue collecting the site characterization dataset for 3 co-located CASTNET/AMoN sites. The dataset shall contain information about the soil and vegetation characteristics within 1km of each AMoN site. The contractor shall collect soil and vegetation samples at approximately 15 locations at each site for laboratory analysis. A bi-direction flux box model will be run using the site characterization information as input to calculate NH<sub>3</sub> fluxes at each site. The three sites where measurements shall be made are Bondville, IL (BVL130), Duke Forest, NC (DUK008), and Chiricahua National Monument, AZ (CHA467).

### **III. CONTRACT LEVEL STATEMENT OF WORK REFERENCE**

The tasks to be performed under this task order are consistent with the activities authorized in CLIN 22 of the contract's Statement of Work.

### **IV. TECHNICAL DIRECTION**

#### **1. Prepare a Technical Proposal & Cost Estimate**

The Contractor shall prepare a Task Order Proposal in accordance with the terms and conditions of contract clauses B.2 entitled Fixed Rates for Services – Indefinite delivery/Indefinite quantity contract.

#### **2. Operate, Calibrate, and Quality Assure the Enhanced-NO<sub>y</sub> Measurement System**

The Contractor shall continue operating the enhanced-NO<sub>y</sub> measurement system at the Duke Forest Flux Tower site (DUK008) which is co-located with a CASTNET filter pack. Operation includes routine calibrations, remote troubleshooting, QA, and data reporting. The operation of the standard NO<sub>y</sub> system and the CASTNET filter pack is covered under Task Order 103 Base Program Operations. Hourly measurements from the enhanced NO<sub>y</sub> system include NH<sub>x</sub>, TN<sub>x</sub>, true NO<sub>2</sub>, NO<sub>y</sub>, NO, and HNO<sub>3</sub>. At the Duke Forest site, the enhanced NO<sub>y</sub> inlet is placed above the forest canopy on the 150ft tower.

Data from the enhanced NO<sub>y</sub> measurement system shall be delivered to CAMD daily with the routine CASTNET submittals. Quality assured data shall be submitted to CAMD monthly, 90 days after data collection.

Under this task the contractor shall also continue testing the converters for a configuration that provides the most reliable, accurate data as compared to the CASTNET filterpack, AMoN and MARGA system at Duke Forest. Further testing on the calibration system is also expected.

This task includes 4 repair trips for the enhanced NO<sub>y</sub> measurement system that shall only be used as necessary.

#### **3. Ammonia Flux Site Characterization Database**

The contractor installed measurement systems to collect soil moisture and temperature, 3D wind direction, and CASTNET meteorology at three CASTNET sites to develop a database of site characteristics for modeling the bi-directional flux of NH<sub>3</sub> under Task Order 0010. The contractor also visited each site to collect soil and vegetation samples for analysis. This task is a continuation of this work. The contractor shall visit each of the 3 sites an additional 3 times (seasonally) to collect and analyze soil and vegetation samples. Additionally, the contractor shall continue to collect hourly meteorological measurements and poll the data remotely. Meteorological measurements will be covered under Task Order 103 Base Program.

Soil moisture and temperature sensors and sonic anemometers were installed under Task Order 0010. Sonic anemometer measurements of 3-dimensional wind (vectors u, v, w) and temperature shall be recorded at 10

Hertz. The contractor shall develop a post-processing package to perform data filtering, coordinate rotations, calculations of 30 minute or hourly turbulence statistics and apply QA metrics from the sonic anemometer. The contractor may use a software package, such as Eddy Pro, to post-process the data.

Hourly data shall be stored in Oracle and submitted to CAMD daily. Quality assured results shall be submitted 90 days after measurements are recorded or analyzed.

This task also includes removing the soil moisture meter, meteorological equipment and data loggers once the study is over. The contractor may request that the site operators or calibrators remove the equipment if appropriate.

EPA has provided the contractor with sampling locations within a 1-km radius of each site. The locations were selected based on soil and vegetation type as reported in national online databases. The contractor shall use the sample locations as a guide when collecting the soil and vegetation samples, keeping in mind that the goal is to collect the dominate species and/or soil type.

Sample measurements and schedules are included in Table 1. The measurements are labeled to indicate if the contractor shall be responsible for the cost of the measurement. A brief description of the measurements that the contractor will be collecting is found below.

Approximately 30 composite soil samples will be collected from 15 locations and analyzed seasonally (3 times under this task order) for each of the three pilot sites (BVL130, DUK008, and CHA467). At each of the 15 locations, 5 soil cores will be collected with a 1-m by 1-m plot. The sample depth will capture the organic (O) and topsoil (A) horizons. Individual cores shall be separated into the two horizons and the five replicate samples shall be composited by horizon and measurement location generation a total of 15 O-horizon and 15 A-horizon samples per pilot site per season. Soil shall be immediately stored under refrigeration and extracted within 72 hours. Samples shall be analyzed for extractable  $\text{NH}_4^+$  and pH. For the  $\text{NH}_4^+$  analysis, five grams of field moist soil shall be extracted in 20 g of 0.01 molar  $\text{CaCl}_2$  following standard protocols. Samples shall be analyzed by ion chromatography (IC) or colorimetry by the chosen laboratory. Direct determination of pH shall be performed on a 1:5 fresh soil/water slurry. Soil gravimetric moisture shall be determined by weight loss after heating 25 g of soil for 24 hours at 105 degrees Celsius (C).

Leaf litter shall be collected on the soil surface in the sample 15 locations as the soil samples were taken. Leaf litter, where available, shall be collected seasonally. Approximately 50 g of leaf litter shall be collected within the 1x1m soil sampling location.

Green leaves shall be sampled seasonally (3 additional times under this task order) from three to five individual trees/shrubs representing the dominate species. EPA will provide maps with the most probable dominate species at each sampling location. Tree/shrub locations shall coincide with the soil/litter sampling locations where possible. For each sample, approximately 25 g of leaves shall be sampled from the upper and lower canopy using the slingshot method. Litter and leaf samples shall immediately be stored under refrigeration. Bulk green leaf and litter samples shall be subsampled for analysis of moisture, total nitrogen (N), and  $\text{NH}_4^+$ . For the  $\text{NH}_4^+$  analysis, fresh material shall be ground in liquid nitrogen and 5 g of material shall be extracted in 20 mL of deionized water. Extractions shall take place within 72 hours of collections. Extracts shall be analyzed for  $\text{NH}_4^+$  by IC or colorimetry. For total N analyses, material shall be dried, ground and analyzed for total N via combustion/elemental analysis. Moisture content shall be determined by weight loss after drying at 60 degrees C to a constant weight. For costing, the contractor shall assume that the upper and lower canopy and individual tree samples shall be bulked for analysis such that each visit will result in 15 samples.

Leaf area index (LAI) shall be measured at seasonally at approximately 15 locations in the summer and winter to capture minimum and maximum LAI. The contractor shall use the LAI 2000 plant canopy analyzer that was procured by EPA/ORD. LAI sampling locations shall correspond with soil and vegetation sampling locations where possible.

Green: EPA will provide; Blue: Amec will provide

| <b>Measurement Frequency</b>                | <b>Measurement</b>   | <b>Time period</b>                         | <b>Notes</b>  | <b>BVL130</b>  | <b>DUK008</b>         | <b>CHA467</b>         |
|---|--|--|---|--|-----------------------|-----------------------|
| Initial Measurement (or 1-time measurement) | Canopy Height <sup>1</sup>   | Dominant species at start and end of study | LIDAR   | LIDAR data exists <sup>1</sup> , but we need to take measurements of crop canopy height <sup>2</sup> | Existing <sup>1</sup> | Needed <sup>1</sup>   |
|   | Vegetation characterization – species type, percentage of each species <sup>1</sup>  | LANDFIRE plots at start of study           | LANDFIRE  | Existing <sup>1</sup> , but we need to know what crops are planted <sup>1,2</sup>                    | Existing <sup>1</sup> | Existing <sup>1</sup> |
|   | Vegetation species density – stems per m <sup>2</sup> or ha <sup>2</sup>   | Peak leaf out                              | LIDAR measurements  | Needed <sup>2</sup>  | Needed <sup>2</sup>   | Needed <sup>2</sup>   |
|   | Surface albedo <sup>1</sup>  | Initial                                    | Remote sensing data   | Existing <sup>1</sup>  | Existing <sup>1</sup> | Existing <sup>1</sup> |
|   | Hydrological group <sup>1</sup>  | Initial                                    | NRCS WSS  | Existing <sup>1</sup>  | Existing <sup>1</sup> | Existing <sup>1</sup> |
|   | Quality Rating <sup>1</sup>  | Initial                                    | NRCS WSS  | Existing <sup>1</sup>  | Existing <sup>1</sup> | Existing <sup>1</sup> |
|   | Soil Type – type, percentage of each species <sup>1</sup>  | Initial                                    | NRCS WSS  | Existing <sup>1</sup>  | Existing <sup>1</sup> | Existing <sup>1</sup> |
|   | Soil Characteristics – bulk density, sand/silt/clay, wilt point, field capacity, depth to impervious layer, rooting depth <sup>1</sup> | Initial                                    | NRCS WSS  | Existing <sup>1</sup>  | Existing <sup>1</sup> | Existing <sup>1</sup> |
|   | Age of Plot <sup>1</sup>   | Initial                                    | Ag – how many years has plot been cultivated, forest – when was stand last cleared? | Existing <sup>1</sup>  | Existing <sup>1</sup> | ?                     |

|                 |  |  |  |  |  |  |
|-----------------|--|--|--|--|--|--|
|                 | <i>Overall slope of site<sup>1</sup></i>   |  | <i>NRCS WSS</i>  | <i>Existing<sup>1</sup></i>                          | <i>Existing<sup>1</sup></i>                          | <i>Existing<sup>1</sup></i>                          |
| <i>Seasonal</i> | <i>LAI Profiles<sup>2</sup></i>  | <i>Coincide with soil/litter sampling. Measurements at leaf out, peak LAI, senescence, and minimum LAI</i> | <i>Li-COR LAI 2200C</i>  | <i>Take measurements at 15 locations<sup>2</sup></i> | <i>Take measurements at 15 locations<sup>2</sup></i> | <i>Take measurements at 15 locations<sup>2</sup></i> |
|                 | <i>Bulk leaf tissue pH, total [N] and [NH<sub>4</sub><sup>+</sup>]<sup>2</sup></i>                     | <i>Seasonally</i>  | <i>Dominate species, 4 trees at each location</i>  | <i>Take measurements at 15 sites<sup>2</sup></i>     | <i>Take measurements at 15 sites<sup>2</sup></i>     | <i>Take measurements at 15 sites<sup>2</sup></i>     |
|                 | <i>Litter – depth, composition, pH, total [N] and [NH<sub>4</sub><sup>+</sup>]<sup>2</sup></i>         | <i>After leaf drop</i>   | <i>Dominate species at soil measurement sites. Same analysis as bulk leaf tissue.</i>  | <i>Take measurements at 15 sites<sup>2</sup></i>     | <i>Take measurements at 15 sites<sup>2</sup></i>     | <i>Take measurements at 15 sites<sup>2</sup></i>     |
|                 | <i>Soil chemistry (pH, [NH<sub>4</sub><sup>+</sup>], and [NO<sub>3</sub><sup>-</sup>])<sup>2</sup></i> | <i>Seasonally, coincide with vegetation samples</i>  | <i>Top two horizons – typically the O (organic) and A (topsoil) horizons for dominate soils/vegetation locations.</i>  | <i>Take measurements at 15 sites<sup>2</sup></i>     | <i>Take measurements at 15 sites<sup>2</sup></i>     | <i>Take measurements at 15 sites<sup>2</sup></i>     |
| <i>Hourly</i>   | <i>Soil characteristics (moisture, temperature)<sup>2</sup></i>  | <i>Hourly measurements at 1 location</i>   | <i>Locations depend on soil types, vegetation and site slope<br/>Temperature probe<br/>Campbell Scientific 107<br/>Soil moisture<br/>Campbell scientific Soil H<sub>2</sub>O content reflectometer<br/>CS650</i> | <i>Take measurements at AMoN site<sup>2</sup></i>    | <i>Take measurements at AMoN site<sup>2</sup></i>    | <i>Take measurements at AMoN site<sup>2</sup></i>    |
|                 | <i>Meteorology<sup>2</sup></i>   | <i>Hourly, 10 Hz temperature and 3d wind vectors</i>   | <i>Standard suite of CASTNET measurements.</i>   | <i>Take measurements at AMoN site<sup>2</sup></i>    | <i>Take measurements at AMoN site<sup>2</sup></i>    | <i>Take measurements at AMoN site<sup>2</sup></i>    |

<sup>1</sup>EPA will provide measurement or data, <sup>2</sup> Amec Foster Wheeler shall provide collected data

The contractor shall include a technical proposal and cost estimate for the measurements listed above.

#### **4. Whiteface Summit Filter Pack**

The contractor installed a filter pack system (including a data logger, pump, flow system) on the roof of the Whiteface research lab at the summit in May 2017 under Task Order 0010. The filter pack flow system automatically switches off when moisture is high (clouds). The site shall be decommissioned in the fall when access to the site is no longer feasible. Under this task for decommissioning the site one trip is included. The filter pack analysis, QA, and calibrations will be included under Task Order 103 Base Operations.

#### **5. Installation of Trace SO<sub>2</sub> Analyzer**

The contractor shall install the trace SO<sub>2</sub> analyzer that was removed the CASTNET Beltsville, MD (BEL116) site at a trace NOy CASTNET site. Operation, quality assurance and data delivery will be covered under Task Order 103, Base Program Operations. During the installation trip, the contractor shall train the site operator, provide SOPs and calibrate the analyzer.

### **V. DELIVERABLES AND SCHEDULE**

#### **1. Proposal**

The contractor shall deliver a Task Order Technical Proposal & Cost Estimate in accordance with clause B.7 Task Order Ordering Procedures of the contract. The proposal shall be submitted 10 days after receipt of the SOW.

#### **2. Monthly Progress Report**

The contractor shall prepare and submit a monthly progress report by the 15<sup>th</sup> of each month summarizing the progress made, issues encountered or expected, work planned for the next reporting period and costs. These reports shall comply with contract clauses F.1, Monthly Progress Report, and F-5, Reports of Work. Reports shall be delivered electronically.

#### **3. Database**

The contractor shall deliver a database with valid data and all QA/QC data reported during the field campaign. The database shall be delivered 90 days after the final measurement is taken.

#### **4. Study Plan & SOPs for Site Characterization Study**

A final study plan shall be delivered by July 30<sup>th</sup> and shall include the final SOPs for the field and laboratory procedures.

#### **5. Publication**

Within 6-months after the final sample is collected, the contractor shall work with the TOPOs and technical advisors to prepare an EPA summary report.

#### **Distribution of Deliverables:**

| Addressee                               | Copies |
|---|--------|
| EPA Contracting Officer (Mike Fox)      | 1      |
| EPA Project Officer (Melissa Puchalski) | 1      |
| EPA Alternate (Ralph Baumgardner)       | 1      |
| EPA Technical Advisor (John T Walker)   | 1      |

**ATTACHMENT B**  
**SUMMARY OF TASK ORDER OBLIGATION/CEILING AMOUNTS**

| Total Funding/Obligation Amounts |                 |                     |                     |
|----------------------------------|-----------------|---------------------|---------------------|
| Period                           | Previous Amount | This Action         | Amount              |
| Base Period                      | -               | \$100,000.00        | \$100,000.00        |
| <b>Total</b>                     | -               | <b>\$100,000.00</b> | <b>\$100,000.00</b> |

| Total Task Order Ceiling |                 |                     |                     |
|--------------------------|-----------------|---------------------|---------------------|
| Period                   | Previous Amount | This Action         | Amount              |
| Base Period              | -               | \$169,754.00        | \$169,754.00        |
| <b>Total</b>             | -               | <b>\$169,754.00</b> | <b>\$169,754.00</b> |

**Note:** This task order is incrementally funded in accordance with contract clause B.5 Limitation of Government's Obligation (EPA-B-32-103).



|  |  |   |  |  |  |
|--|--|---|--|--|--|
| <b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>  |  | 1. CONTRACT ID CODE   |  | PAGE OF PAGES<br>1 2   |  |
| 2. AMENDMENT/MODIFICATION NO.<br>P00001  |  | 3. EFFECTIVE DATE<br>See Block 16C  |  | 4. REQUISITION/PURCHASE REQ. NO.   |  |
| 5. PROJECT NO. (If applicable)   |  | 6. ISSUED BY<br>HPOD  |  | 7. ADMINISTERED BY (If other than Item 6)  |  |
| HPOD<br>US Environmental Protection Agency<br>William Jefferson Clinton Building<br>1200 Pennsylvania Avenue, N. W.<br>Mail Code: 3803R<br>Washington DC 20460 |  | 8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)<br>AMEC ENVIRONMENT & INFRASTRUCTURE, INC.<br>Attn: LISA DWYER<br>AMEC FOSTER WHEELER ENVIRONMENT & I<br>751 ARBOR WAY, STE 180<br>(b)(4)<br>BLUE BELL PA 194221960 |  | 9A. AMENDMENT OF SOLICITATION NO.<br>9B. DATED (SEE ITEM 11)<br>10A. MODIFICATION OF CONTRACT/ORDER NO.<br>EP-W-16-015<br>1010<br>10B. DATED (SEE ITEM 13)<br>06/27/2017 |  |
| CODE 038086125   |  | FACILITY CODE   |  |  |  |

**11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS**

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.  
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning \_\_\_\_\_ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

See Schedule

**13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

|           |   |
|-----------|---|
| CHECK ONE | A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.  |
| X         | B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b). |
|           | C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:  |
|           | D. OTHER (Specify type of modification and authority)   |

**E. IMPORTANT:** Contractor ☒ is not. ☐ is required to sign this document and return \_\_\_\_\_ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

DUNS Number: 038086125

The purpose of this administrative modification is to change the alternate COR to Taylor Macy and change Ralph Baumgardner from the alternate COR to the technical point of contact.

Alternate COR:

Taylor Macy, (202) 343-9183, Macy.Taylor@epa.gov

Technical POC:

Ralph Baumgardner, (919) 541-4625, Baumgardner.Ralph@epa.gov

TOCOR: Melissa Puchalski

LIST OF CHANGES:

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.

|   |                  |  |                                |
|---|------------------|--|--------------------------------|
| 15A. NAME AND TITLE OF SIGNER (Type or print)                           |                  | 16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)<br>Michael C. Fox |                                |
| 15B. CONTRACTOR/OFFEROR<br><br>(Signature of person authorized to sign) | 15C. DATE SIGNED | 16B. UNITED STATES OF AMERICA<br><br>(Signature of Contracting Officer)      | 16C. DATE SIGNED<br>12/19/2017 |



|                           |   |      |    |
|---------------------------|---|------|----|
| <b>CONTINUATION SHEET</b> | REFERENCE NO. OF DOCUMENT BEING CONTINUED | PAGE | OF |
|                           | EP-W-16-015/1010/P00001                   | 2    | 2  |

NAME OF OFFEROR OR CONTRACTOR

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

| ITEM NO.<br>(A) | SUPPLIES/SERVICES<br>(B)   | QUANTITY<br>(C) | UNIT<br>(D) | UNIT PRICE<br>(E) | AMOUNT<br>(F) |
|-----------------|--|-----------------|-------------|-------------------|---------------|
|                 | <p>Reason for Modification : Other Administrative Action</p> <p>Total Amount for this Modification: \$0.00</p> <p>New Total Amount for this Version: \$0.00</p> <p>New Total Amount for this Award: \$169,754.00</p> <p>Alternate COR/Project Officer changed to :<br/>Taylor Macy</p> <p>Payment:</p> <p>RTP Finance Center<br/>US Environmental Protection Agency<br/>RTP-Finance Center (AA216-01)<br/>109 TW Alexander Drive<br/>www2.epa.gov/financial/contracts<br/>Durham NC 27711</p> <p>Period of Performance: 07/09/2017 to 07/08/2018</p> |                 |             |                   |               |

|   |   |                   |  |   |  |                                |  |
|---|---|-------------------|--|---|--|--------------------------------|--|
| <b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>   |   |                   |  | 1. CONTRACT ID CODE   |  | PAGE OF PAGES                  |  |
|   |   |                   |  |   |  | 1      2                       |  |
| 2. AMENDMENT/MODIFICATION NO.   |   | 3. EFFECTIVE DATE |  | 4. REQUISITION/PURCHASE REQ. NO.  |  | 5. PROJECT NO. (If applicable) |  |
| 002   |   | See Block 16C     |  | PR-OAR-18-00697   |  |                                |  |
| 6. ISSUED BY  |   | CODE              |  | 7. ADMINISTERED BY (If other than Item 6)   |  | CODE                           |  |
| HPOD  |   |                   |  |   |  |                                |  |
| US Environmental Protection Agency<br>William Jefferson Clinton Building<br>1200 Pennsylvania Avenue, N. W.<br>Mail Code: 3803R<br>Washington DC 20460  |   |                   |  |   |  |                                |  |
| 8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)   |   |                   |  | (x)   |  |                                |  |
| AMEC ENVIRONMENT & INFRASTRUCTURE, INC.<br>Attn: LISA DWYER<br>AMEC FOSTER WHEELER ENVIRONMENT & I<br>751 ARBOR WAY, STE 180<br>(b)(4)<br>BLUE BELL PA 194221960  |   |                   |  |   |  |                                |  |
|   |   |                   |  | 9A. AMENDMENT OF SOLICITATION NO.   |  |                                |  |
|   |   |                   |  | 9B. DATED (SEE ITEM 11)   |  |                                |  |
|   |   |                   |  | x 10A. MODIFICATION OF CONTRACT/ORDER NO.<br>EP-W-16-015<br>1010  |  |                                |  |
|   |   |                   |  | 10B. DATED (SEE ITEM 13)<br>06/27/2017  |  |                                |  |
| CODE 038086125  |   | FACILITY CODE     |  |   |  |                                |  |
| <b>11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS</b>  |   |                   |  |   |  |                                |  |
| <input type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers <span style="float: right;"><input type="checkbox"/> is extended. <input type="checkbox"/> is not extended.</span><br>Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified. |   |                   |  |   |  |                                |  |
| 12. ACCOUNTING AND APPROPRIATION DATA (If required)   |   |                   |  | Net Increase:   |  | \$69,754.00                    |  |
| See Schedule  |   |                   |  |   |  |                                |  |
| <b>13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.</b>  |   |                   |  |   |  |                                |  |
| CHECK ONE   | A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.  |                   |  |   |  |                                |  |
|   | B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b). |                   |  |   |  |                                |  |
|   | C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:  |                   |  |   |  |                                |  |
| X   | D. OTHER (Specify type of modification and authority)<br>FAR 52.232-22 Limitation of Funds  |                   |  |   |  |                                |  |
| <b>E. IMPORTANT:</b> Contractor <input checked="" type="checkbox"/> is not. <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.   |   |                   |  |   |  |                                |  |
| 14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)   |   |                   |  |   |  |                                |  |
| DUNS Number: 038086125  |   |                   |  |   |  |                                |  |
| The purpose of this modification is to add incremental funding in the amount of \$69,754.00 to this task order.   |   |                   |  |   |  |                                |  |
| This is a Time-and-Materials (T&M) task order with a total ceiling price of \$169,754.00 the Contractor is not authorized to exceed. The Contractor exceeds at its own risk.  |   |                   |  |   |  |                                |  |
| The total obligated/funded ceiling amount for this task order is being increased by \$69,754.00, from \$100,000.00 to \$169,754.00. This order is now fully-funded as detailed in Attachment B Summary of Amounts and Ceilings and Attachment B is hereby incorporated (1 page).  |   |                   |  |   |  |                                |  |
| Continued ...   |   |                   |  |   |  |                                |  |
| Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.   |   |                   |  |   |  |                                |  |
| 15A. NAME AND TITLE OF SIGNER (Type or print)   |   |                   |  | 16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)  |  |                                |  |
|   |   |                   |  | Michael C. Fox  |  |                                |  |
| 15B. CONTRACTOR/OFFEROR   |   | 15C. DATE SIGNED  |  | 16B. UNITED STATES OF AMERICA   |  | 16C. DATE SIGNED               |  |
| (Signature of person authorized to sign)  |   |                   |  | <br>(Signature of Contracting Officer) |  | 03/29/2018                     |  |

|                           |   |      |    |
|---------------------------|---|------|----|
| <b>CONTINUATION SHEET</b> | REFERENCE NO. OF DOCUMENT BEING CONTINUED<br>EP-W-16-015/1010/002 | PAGE | OF |
|                           |   | 2    | 2  |

NAME OF OFFEROR OR CONTRACTOR

AMEC ENVIRONMENT &amp; INFRASTRUCTURE, INC.

| ITEM NO.<br>(A) | SUPPLIES/SERVICES<br>(B)   | QUANTITY<br>(C) | UNIT<br>(D) | UNIT PRICE<br>(E) | AMOUNT<br>(F) |
|-----------------|--|-----------------|-------------|-------------------|---------------|
|                 | <p>TOCOR: Melissa Puchalski</p> <p>LIST OF CHANGES:</p> <p>Reason for Modification : Funding Only Action</p> <p>Total Amount for this Modification: \$0.00</p> <p>New Total Amount for this Version: \$169,754.00</p> <p>New Total Amount for this Award: \$169,754.00</p> <p>Obligated Amount for this Modification: \$69,754.00</p> <p>New Total Obligated Amount for this Award:</p> <p>\$169,754.00</p> <p>Incremental Funded Amount changed: from</p> <p>\$100,000.00 to \$169,754.00</p> <p>CHANGES FOR LINE ITEM NUMBER: 1</p> <p>Obligated Amount for this modification: \$69,754.00</p> <p>Incremental Funded Amount changed from</p> <p>\$100,000.00 to \$169,754.00</p> <p>NEW ACCOUNTING CODE ADDED:</p> <p>Account code:</p> <p>18-19-C-58D5-000A45-2505-1858DC8044-001</p> <p>Beginning FiscalYear 18</p> <p>Ending Fiscal Year 19</p> <p>Fund (Appropriation) C</p> <p>Budget Organization 58D5</p> <p>Program (PRC) 000A45</p> <p>Budget (BOC) 2505</p> <p>Job # (Site/Project)</p> <p>Cost Organization</p> <p>DCN-LineID 1858DC8044-001</p> <p>Amount: \$69,754.00</p> <p>Subject To Funding: N</p> <p>Payment Address:</p> <p>RTP Finance Center</p> <p>US Environmental Protection Agency</p> <p>RTP-Finance Center (AA216-01)</p> <p>109 TW Alexander Drive</p> <p>www2.epa.gov/financial/contracts</p> <p>Durham NC 27711</p> <p>Payment:</p> <p>RTP Finance Center</p> <p>US Environmental Protection Agency</p> <p>RTP-Finance Center (AA216-01)</p> <p>109 TW Alexander Drive</p> <p>www2.epa.gov/financial/contracts</p> <p>Durham NC 27711</p> <p>FOB: Destination</p> <p>Period of Performance: 07/09/2017 to 07/08/2018</p> |                 |             |                   |               |

**ATTACHMENT B**  
**SUMMARY OF TASK ORDER OBLIGATION/CEILING AMOUNTS**

| Total Funding/Obligation Amounts |                     |                    |                     |
|----------------------------------|---------------------|--------------------|---------------------|
| Period                           | Previous Amount     | This Action        | Amount              |
| Base Period                      | \$100,000.00        | \$69,754.00        | \$169,754.00        |
| <b>Total</b>                     | <b>\$100,000.00</b> | <b>\$69,754.00</b> | <b>\$169,754.00</b> |

| Total Task Order Ceiling |                 |             |                     |
|--------------------------|-----------------|-------------|---------------------|
| Period                   | Previous Amount | This Action | Amount              |
| Base Period              | -               | -           | \$169,754.00        |
| <b>Total</b>             | <b>-</b>        | <b>-</b>    | <b>\$169,754.00</b> |

**Note:** This task order is incrementally funded in accordance with contract clause B.5 Limitation of Government's Obligation (EPA-B-32-103).

|  |  |                                    |  |  |  |
|--|--|------------------------------------|--|--|--|
| <b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>  |  | 1. CONTRACT ID CODE                |  | PAGE OF PAGES<br>1 2   |  |
| 2. AMENDMENT/MODIFICATION NO.<br>P00003  |  | 3. EFFECTIVE DATE<br>See Block 16C |  | 4. REQUISITION/PURCHASE REQ. NO.                               |  |
| 6. ISSUED BY<br>HPOD<br>US Environmental Protection Agency<br>William Jefferson Clinton Building<br>1200 Pennsylvania Avenue, N. W.<br>Mail Code: 3803R<br>Washington DC 20460                                 |  | CODE<br>HPOD                       |  | 5. PROJECT NO. (If applicable)                                 |  |
| 8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)<br>WOOD ENVIRONMENT & INFRASTRUCTURE<br>SOLUTIONS, INC. Attn: JOSEPH FARRELL<br>751 Arbor Way<br>Ste 180<br>Blue Bell PA 194221972 |  | (X)                                |  | 9A. AMENDMENT OF SOLICITATION NO.                              |  |
| CODE 038086125   |  | FACILITY CODE                      |  | 9B. DATED (SEE ITEM 11)  |  |
|  |  | X                                  |  | 10A. MODIFICATION OF CONTRACT/ORDER NO.<br>EP-W-16-015<br>1010 |  |
|  |  |                                    |  | 10B. DATED (SEE ITEM 13)<br>06/27/2017                         |  |

**11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS**

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.  
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning \_\_\_\_\_ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or electronic communication which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by letter or electronic communication, provided each letter or electronic communication makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required) Net Decrease: -\$52,271.77  
See Schedule

**13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

|           |   |
|-----------|---|
| CHECK ONE | A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.  |
|           | B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation data, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b). |
|           | C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:  |
| X         | D. OTHER (Specify type of modification and authority)<br>FAR 52.232-22 Limitation of Funds  |

**E. IMPORTANT:** Contractor ☒ is not ☐ is required to sign this document and return \_\_\_\_\_ copies to the issuing office.

**14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)**

DUNS Number: 038086125

The purpose of this modification is de-obligate funding in the amount of \$52,271.77 from this task order.

TOCOR: Melissa Puchalski

LIST OF CHANGES:

Reason for Modification: Funding Only Action

Obligated Amount for this Modification: -\$52,271.77

New Total Obligated Amount for this Award: \$117,482.23

Incremental Funded Amount changed: from \$169,754.00 to \$117,482.23

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.

|   |                  |  |                                |
|---|------------------|--|--------------------------------|
| 15A. NAME AND TITLE OF SIGNER (Type or print)                           |                  | 16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)<br>Michael C. Fox |                                |
| 15B. CONTRACTOR/OFFEROR<br><br>(Signature of person authorized to sign) | 15C. DATE SIGNED | 16B. UNITED STATES OF AMERICA<br><br>(Signature of Contracting Officer)      | 16C. DATE SIGNED<br>03/21/2019 |

Previous edition unusable

|                           |   |      |    |
|---------------------------|---|------|----|
| <b>CONTINUATION SHEET</b> | REFERENCE NO. OF DOCUMENT BEING CONTINUED | PAGE | OF |
|                           | EP-W-16-015/1010/P00003                   | 2    | 2  |

NAME OF OFFEROR OR CONTRACTOR

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

| ITEM NO.<br>(A) | SUPPLIES/SERVICES<br>(B)  | QUANTITY<br>(C) | UNIT<br>(D) | UNIT PRICE<br>(E) | AMOUNT<br>(F) |
|-----------------|---|-----------------|-------------|-------------------|---------------|
|                 | <p>CHANGES FOR LINE ITEM NUMBER: 1</p> <p>Obligated Amount for this Modification:<br/>-\$52,271.77</p> <p>Incremental Funded Amount changed from<br/>\$169,754.00 to \$117,482.23</p> <p>FOB changed from Destination to</p> <p>CHANGES FOR ACCOUNTING CODE:<br/>18-19-C-58D5-000A45-2505-1858DC8044-001<br/>Amount changed from \$69,754.00 to \$17,482.23</p> <p>Payment:</p> <p>RTP Finance Center<br/>US Environmental Protection Agency<br/>RTP-Finance Center (AA216-01)<br/>109 TW Alexander Drive<br/>www2.epa.gov/financial/contracts<br/>Durham NC 27711</p> <p>Period of Performance: 07/09/2017 to 07/08/2018</p> |                 |             |                   |               |

|  |  |  |  |   |  |   |  |
|--|--|--|--|---|--|---|--|
| <b>SOLICITATION/CONTRACT/ORDER FOR COMMERCIAL ITEMS</b><br><small>OFFEROR TO COMPLETE BLOCKS 12, 17, 23, 24, &amp; 30</small>  |  |  |  | 1. REQUISITION NUMBER<br>PR-OAR-17-01297  |  | PAGE OF<br>1   3  |  |
| 2. CONTRACT NO.<br>EP-W-16-015   |  | 3. AWARD EFFECTIVE DATE  |  | 4. ORDER NUMBER<br>1011   |  | 5. SOLICITATION NUMBER  |  |
| 7. FOR SOLICITATION INFORMATION CALL:  |  | a. NAME<br>Michael Fox   |  | b. TELEPHONE NUMBER (No collect calls)<br>202-564-2550  |  | 8. OFFER DUE DATE/LOCAL TIME<br>ET  |  |
| 9. ISSUED BY<br>EPOD<br>US Environmental Protection Agency<br>William Jefferson Clinton Building<br>1200 Pennsylvania Avenue, N. W.<br>Mail Code: 3803R<br>Washington DC 20460   |  |  |  | 10. THIS ACQUISITION IS<br><input checked="" type="checkbox"/> UNRESTRICTED OR <input type="checkbox"/> SET ASIDE: % FOR<br><br><input type="checkbox"/> SMALL BUSINESS<br><input type="checkbox"/> WOMEN-OWNED SMALL BUSINESS<br><input type="checkbox"/> (WOSB) ELIGIBLE UNDER THE WOMEN-OWNED SMALL BUSINESS PROGRAM<br><input type="checkbox"/> EDWOSB<br><input type="checkbox"/> SERVICE-DISABLED VETERAN-OWNED SMALL BUSINESS<br><input type="checkbox"/> (SBA)<br>NA CS 541620<br>SIZE STANDARD: \$15.0 |  |   |  |
| 11. DELIVERY FOR FOB DESTINATION UNLESS BLOCK IS MARKED<br><input type="checkbox"/> SEE SCHEDULE   |  | 12. DISCOUNT TERMS   |  | 13a. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700)   |  | 13c. RATING   |  |
| 15. DELIVER TO<br>OAR/OAQPS/CORE<br>US Environmental Protection Agency<br>Mail Code: C404-02<br>109 TW Alexander Drive<br>Durham NC 27711  |  |  |  | 16. ADMINISTERED BY<br>EPOD<br>US Environmental Protection Agency<br>William Jefferson Clinton Building<br>1200 Pennsylvania Avenue, N. W.<br>Mail Code: 3803R<br>Washington DC 20460   |  |   |  |
| 17a. CONTRACTOR/ OFFEROR<br>CODE 038086125   |  | FACILITY CODE  |  | 18a. PAYMENT/MILEAGE MADE BY<br>CODE RTP FMC  |  |   |  |
| 17a. CONTRACTOR/ OFFEROR<br>AMEC ENVIRONMENT & INFRASTRUCTURE, INC.<br>Attn: LISA DWYER<br>AMEC FOSTER WHEELER ENVIRONMENT & I<br>751 ARBOR WAY, STE 180<br>BLUE BELL PA 194221960   |  |  |  | 18a. PAYMENT/MILEAGE MADE BY<br>RTP Finance Center<br>US Environmental Protection Agency<br>RTP-Finance Center (AA216-01)<br>109 TW Alexander Drive<br>www2.epa.gov/financial/contracts<br>Durham NC 27711  |  |   |  |
| TELEPHONE NO. (b)(4)   |  |  |  |   |  |   |  |
| 17b. CHECK IF REMITTANCE IS DIFFERENT AND PUT SUCH ADDRESS IN OFFER  |  |  |  | 18b. SUBMIT INVOICES TO ADDRESS SHOWN IN BLOCK 18a UNLESS BLOCK BELOW IS CHECKED <input type="checkbox"/> SEE ADDENDUM  |  |   |  |
| 19. ITEM NO.   |  | 20. SCHEDULE OF SUPPLIES/SERVICES  |  | 21. QUANTITY  |  | 22. UNIT  |  |
|  |  | DUNS Number: C38086125<br>This task order is issued in accordance with Task Order Ordering Procedures and hereby incorporates the base contract terms and conditions by reference. The effective date for performance to commence is July 17, 2017.<br><br>The Contractor shall perform in accordance with the Attachment A Statement of Work (3 pages) and the accepted technical proposal and cost estimate dated July 11, 2017 (5 pages) in the amount of<br>(Use Reverse and/or Attach Additional Sheets as Necessary) |  |   |  |   |  |
|  |  |  |  |   |  | 23. UNIT PRICE  |  |
|  |  |  |  |   |  | 24. AMOUNT  |  |
| 25. ACCOUNTING AND APPROPRIATION DATA<br>See Schedule  |  |  |  |   |  | 26. TOTAL AWARD AMOUNT (For Govt Use Only)<br>\$6,400.00  |  |
| 27a. SOLICITATION INCORPORATES BY REFERENCE FAR 52.212-1, 62.212-4, FAR 52.212-3 AND 52.212-5 ARE ATTACHED. ADDENDA <input type="checkbox"/> ARE <input type="checkbox"/> ARE NOT ATTACHED.  |  |  |  |   |  |   |  |
| 27b. CONTRACT/PURCHASE ORDER INCORPORATES BY REFERENCE FAR 52.212-4, FAR 52.212-5 IS ATTACHED. ADDENDA <input type="checkbox"/> ARE <input type="checkbox"/> ARE NOT ATTACHED.   |  |  |  |   |  |   |  |
| 28. CONTRACTOR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN COPIES TO ISSUING OFFICE. CONTRACTOR AGREES TO FURNISH AND DELIVER ALL ITEMS SET FORTH OR OTHERWISE IDENTIFIED ABOVE AND ON ANY ADDITIONAL SHEETS SUBJECT TO THE TERMS AND CONDITIONS SPECIFIED. |  |  |  |   |  | 29. AWARD OF CONTRACT. OFFER DATED _____ YOUR OFFER ON SOLICITATION (BLOCK 5), INCLUDING ANY ADDITIONS OR CHANGES WHICH ARE SET FORTH HEREIN, IS ACCEPTED AS TO ITEMS |  |
| 30a. SIGNATURE OF OFFEROR/CONTRACTOR<br><b>Kemp Howell - Project Manager</b>   |  |  |  | 31a. UNITED STATES OF AMERICA (SIGNATURE OF CONTRACTING OFFICER)<br><i>Michael Fox</i>  |  |   |  |
| 30b. NAME AND TITLE OF SIGNER (Type or print)<br><i>Kemp Howell</i>  |  | 30c. DATE SIGNED<br>7/14/17  |  | 31b. NAME OF CONTRACTING OFFICER (Type or print)<br>Michael C. Fox  |  | 31c. DATE SIGNED<br>07/14/2017  |  |
| AUTHORIZED FOR LOCAL REPRODUCTION<br>PREVIOUS EDITION IS NOT USABLE  |  |  |  | STANDARD FORM 1449 (REV. 2/2012)<br>Prescribed by GSA - FAR (48 CFR) 53.212   |  |   |  |

| 19.<br>ITEM NO. | 20.<br>SCHEDULE OF SUPPLIES/SERVICES  | 21.<br>QUANTITY | 22.<br>UNIT | 23.<br>UNIT PRICE | 24.<br>AMOUNT |
|-----------------|---|-----------------|-------------|-------------------|---------------|
| 0001            | <p>\$6,400.00.</p> <p>This is a Time-and-Materials (T&amp;M) task order with a total ceiling price of \$6,400.00, which the Contractor is not authorized to exceed. The Contractor exceeds at its own risk.</p> <p>The total obligated/funded ceiling amount for this order is currently \$3,000.00. This order is incrementally funded as detailed in Attachment B Summary of Amounts and Ceilings and Attachment B is hereby incorporated (1 page).</p> <p>Contracting Officer's Representative (COR) for this task order:<br/>Melissa Puchalski, (202) 343-9882,<br/>Puchalski.Melissa@epa.gov</p> <p>Alternate COR:<br/>Mark Evangelista, (919) 541-2803,<br/>Evangelista.Mark@epa.gov</p> <p>The services of this order are for severable.<br/>TOCOR: MRURY02<br/>Period of Performance: 07/17/2017 to 07/08/2018</p> <p>Prepare U.S./Canada Progress Report</p> <p>Accounting Info:<br/>Continued ...</p> |                 |             |                   |               |

32a. QUANTITY IN COLUMN 21 HAS BEEN

☐ RECEIVED    ☐ INSPECTED    ☐ ACCEPTED, AND CONFORMS TO THE CONTRACT, EXCEPT AS NOTED: \_\_\_\_\_

|   |                        |                                    |   |                       |
|---|------------------------|------------------------------------|---|-----------------------|
| 32b. SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE          |                        | 32c. DATE                          | 32d. PRINTED NAME AND TITLE OF AUTHORIZED GOVERNMENT REPRESENTATIVE                               |                       |
| 32e. MAILING ADDRESS OF AUTHORIZED GOVERNMENT REPRESENTATIVE    |                        |                                    | 32f. TELEPHONE NUMBER OF AUTHORIZED GOVERNMENT REPRESENTATIVE                                     |                       |
|   |                        |                                    | 32g. E-MAIL OF AUTHORIZED GOVERNMENT REPRESENTATIVE   |                       |
| 33. SHIP NUMBER   | 34. VOUCHER NUMBER     | 35. AMOUNT VERIFIED<br>CORRECT FOR | 36. PAYMENT   | 37. CHECK NUMBER      |
| <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL |                        |                                    | <input type="checkbox"/> COMPLETE <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL |                       |
| 38. S/R ACCOUNT NUMBER  | 39. S/R VOUCHER NUMBER | 40. PAID BY                        |   |                       |
| 41a. I CERTIFY THIS ACCOUNT IS CORRECT AND PROPER FOR PAYMENT   |                        |                                    | 42a. RECEIVED BY ( <i>Print</i> )   |                       |
| 41b. SIGNATURE AND TITLE OF CERTIFYING OFFICER                  |                        | 41c. DATE                          | 42b. RECEIVED AT ( <i>Location</i> )  |                       |
|   |                        |                                    | 42c. DATE REC'D ( <i>YY/MM/DD</i> )   | 42d. TOTAL CONTAINERS |



NAME OF OFFEROR OR CONTRACTOR  
AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

| ITEM NO.<br>(A) | SUPPLIES/SERVICES<br>(B)  | QUANTITY<br>(C) | UNIT<br>(D) | UNIT PRICE<br>(E) | AMOUNT<br>(F) |
|-----------------|---|-----------------|-------------|-------------------|---------------|
|                 | 17-18-B-53G3-102A58-2505-1753GP7032-001 BFY: 17<br>EFY: 18 Fund: B Budget Org: 53G3 Program (PRC):<br>102A58 Budget (BOC): 2505 DCN - Line ID:<br>1753GP7032-001<br>Funding Flag: Partial<br>Funded: \$3,000.00 |                 |             |                   |               |

**ATTACHMENT A  
STATEMENT OF WORK**

|                               |                                   |
|-------------------------------|-----------------------------------|
| <b>Title:</b>                 | Prepare US/Canada Progress Report |
| <b>Contractor:</b>            | Amec Foster Wheeler               |
| <b>Contract #:</b>            | EP-W-16-015                       |
| <b>Task Order #:</b>          | 1011                              |
| <b>Period of Performance:</b> | 07/17/2017 to 7/08/2018           |

**EPA Key Personnel**

**Task Order Project Officer (TOPO)/Contract Level Project Officer (PO):**

Melissa Puchalski  
Clean Air Markets Division (OAP/OAR/CAMD)  
1200 Pennsylvania Ave., NW  
Mail Code 6204M  
Washington, DC 20460  
*phone:* (202) 343-9882  
*email:* puchalski.melissa@epa.gov

**Alternate TOPO:**

Mark Evangelista  
Air Quality Assessment Division (OAR/OAQPS/AQAD)  
Mail Drop C304-04  
Research Triangle Park, NC 27711  
Phone: (919) 541-2803  
Email: evangelista.mark@epa.gov

**Contracting Officer (CO):**

Mike Fox  
Contracting Officer  
Administrative Contract Service Center  
1200 Pennsylvania Ave N.W.  
Mail Code 3803R  
Washington DC 20460  
*phone:* (202) 564-2550  
*email:* fox.michael@epa.gov

## **STATEMENT OF WORK**

### **I. INTRODUCTION**

The Clean Air Status and Trends Network (CASTNET) is a long-term environmental monitoring network that measures changes in ambient air quality and assesses atmospheric deposition over broad geographic regions of the U.S. (<https://www.epa.gov/castnet>). Operating since 1987, CASTNET has evolved into a robust regional monitoring program which currently consists of approximately 95 monitoring stations nationwide. The Environmental Protection Agency (EPA) coordinates the operation of the network in cooperation with numerous federal, tribal, state and local partners.

The primary monitoring objectives of CASTNET are to:

- Provide high quality data on atmospheric deposition, rural ground level ozone and other forms of atmospheric pollution;
- Support the primary and secondary ozone NAAQS and provide data on NAAQS compliance in rural areas;
- Monitor the status and trends in regional air quality and atmospheric deposition;
- Assess and report on geographic patterns and long-term, temporal trends in ambient air pollution and atmospheric deposition;
- Improve our understanding of PM and ozone formation;
- Validate and improve atmospheric models;
- Provide data for health-based research and epidemiology studies;
- Assess the effectiveness of EPA's emission reduction programs; and
- Support science and ecosystem studies.

CASTNET sites measure weekly average concentrations of sulfate ( $\text{SO}_4^{2-}$ ), nitrate ( $\text{NO}_3^-$ ), ammonium ( $\text{NH}_4^+$ ), sulfur dioxide ( $\text{SO}_2$ ), nitric acid ( $\text{HNO}_3$ ), chloride ( $\text{Cl}^-$ ) and the base cations ( $\text{Na}^+$ ,  $\text{K}^+$ ,  $\text{Mg}^{2+}$  and  $\text{Ca}^{2+}$ ) using a 3-stage filter pack. In addition, each site may make ancillary measurements, including hourly ozone ( $\text{O}_3$ ), hourly meteorology, ammonia ( $\text{NH}_3$ ) gas using passive devices, and trace-level gases. Trace-level gas monitors include reactive oxidized nitrogen ( $\text{NO}_y$ ), nitric oxide ( $\text{NO}$ ), sulfur dioxide ( $\text{SO}_2$ ) and carbon monoxide ( $\text{CO}$ ). CASTNET  $\text{O}_3$ , meteorological, and trace gas measurements follow the requirements in the Code of Federal Regulations (CFR) and EPA's Quality Assurance Handbook.

### **II. PURPOSE**

The primary purpose of this task order is to prepare the 2016 Canada-United States Air Quality Agreement Progress Report. The Task Order Project Officer shall provide technical direction for performance of specific tasks under this task order.

### **III. CONTRACT LEVEL STATEMENT OF WORK REFERENCE**

The tasks to be performed under this task order are consistent with the activities authorized in CLIN 22 of the contract's Statement of Work.

### **IV. TECHNICAL DIRECTION**

#### **1. Prepare a Technical Proposal & Cost Estimate**

The Contractor shall prepare a Task Order Proposal in accordance with the terms and conditions of contract clauses B.2 entitled Fixed Rates for Services – Indefinite delivery/Indefinite quantity contract.

## **2. Prepare the 2016 Canada-United States Air Quality Agreement Progress Report.**

The Contractor shall prepare the 2016 Report utilizing the data and text provided by EPA, and using the inside grid and cover design approved by EPA. The content of the 2016 report will be provided to the Contractor by EPA as a Word document including source data for graphs in Excel format) and tables, and accompanying text. The Contractor shall create the final graphics (charts and tables) for the 2016 Report from the data provided by EPA. The graphics created by the Contractor shall include the same data format and depiction as the graphics provided by EPA. The Contractor may use the EPA-provided graphics as a guide. Previous version of the Report (2014) will be provided as an example.

The Contractor shall research and identify photos (10-15) to include in the 2016 report for review by EPA. If necessary, revise photos selected and purchase photo rights, if required.

EPA has estimated 20 labor hours for contract alterations after the author reviews the draft and proofing to prepare the final Report. This cost shall only be charged if needed.

## **3. Travel to Meetings**

None anticipated.

# **V. DELIVERABLES AND SCHEDULE**

## **1. Proposal**

The contractor shall deliver a Task Order Proposal in accordance with clause B.7 Task Order Ordering Procedures of the contract. The proposal shall be submitted 10 days after receipt of the SOW.

## **2. Monthly Progress Report**

The contractor shall prepare and submit a monthly progress report by the 15<sup>th</sup> of each month summarizing the progress made, issues encountered or expected, work planned for the next reporting period and costs. These reports shall comply with contract clauses F.3 Reports of Work and F.5 Monthly Progress Report. Reports shall be delivered electronically.

## **3. Report**

The 2014 Report will be provided as an example to the Contractor by EPA. The 2016 Report will be a shorter and more condensed version of the 2014 Report; page total of the 2016 Report will be determined upon approval of the concept, cover, and inside grid. The format of the Report shall be PDF. The Contractor will create a final high resolution PDF and transfer it to DVD. No hardcopies of the Report will be required. All (layered) source Adobe Photoshop CS4 files shall be provided to EPA. All fonts shall be provided to EPA.

### **Distribution of Deliverables:**

| Addressee                               | Copies |
|---|--------|
| EPA Contracting Officer (Mike Fox)      | 1      |
| EPA Project Officer (Melissa Puchalski) | 1      |
| EPA Alternate (Mark Evangelista)        | 1      |

**ATTACHMENT B**  
**SUMMARY OF TASK ORDER OBLIGATION/CEILING AMOUNTS**

| Total Funding/Obligation Amounts |                 |                   |                   |
|----------------------------------|-----------------|-------------------|-------------------|
| Period                           | Previous Amount | This Action       | Amount            |
| Base Period                      | -               | \$3,000.00        | \$3,000.00        |
| <b>Total</b>                     | -               | <b>\$3,000.00</b> | <b>\$3,000.00</b> |

| Total Task Order Ceiling |                 |                   |                   |
|--------------------------|-----------------|-------------------|-------------------|
| Period                   | Previous Amount | This Action       | Amount            |
| Base Period              | -               | \$6,400.00        | \$6,400.00        |
| <b>Total</b>             | -               | <b>\$6,400.00</b> | <b>\$6,400.00</b> |

**Note:** This task order is incrementally funded in accordance with contract clause B.5 Limitation of Government's Obligation (EPA-B-32-103).

|  |   |                   |  |  |  |                                    |  |
|--|---|-------------------|--|--|--|------------------------------------|--|
| <b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>  |   |                   |  | 1. CONTRACT ID CODE  |  | PAGE OF PAGES                      |  |
|  |   |                   |  |  |  | 1      2                           |  |
| 2. AMENDMENT/MODIFICATION NO.  |   | 3. EFFECTIVE DATE |  | 4. REQUISITION/PURCHASE REQ. NO.   |  | 5. PROJECT NO. (If applicable)     |  |
| 001  |   | See Block 16C     |  | PR-OAR-17-01514  |  |                                    |  |
| 6. ISSUED BY   |   | CODE              |  | 7. ADMINISTERED BY (If other than Item 6)  |  | CODE                               |  |
| HPOD   |   |                   |  |  |  |                                    |  |
| US Environmental Protection Agency<br>William Jefferson Clinton Building<br>1200 Pennsylvania Avenue, N. W.<br>Mail Code: 3803R<br>Washington DC 20460   |   |                   |  |  |  |                                    |  |
| 8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)  |   |                   |  | (x)  |  |                                    |  |
| AMEC ENVIRONMENT & INFRASTRUCTURE, INC.<br>Attn: LISA DWYER<br>AMEC FOSTER WHEELER ENVIRONMENT & I<br>751 ARBOR WAY, STE 180<br>(b)(4)<br>BLUE BELL PA 194221960   |   |                   |  |  |  |                                    |  |
| CODE 038086125   |   |                   |  | FACILITY CODE  |  |                                    |  |
|  |   |                   |  | 9A. AMENDMENT OF SOLICITATION NO.<br>9B. DATED (SEE ITEM 11)<br>10A. MODIFICATION OF CONTRACT/ORDER NO.<br>EP-W-16-015<br>1011<br>10B. DATED (SEE ITEM 13)<br>07/14/2017 |  |                                    |  |
| <b>11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS</b>   |   |                   |  |  |  |                                    |  |
| <input type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers <input type="checkbox"/> is extended. <input type="checkbox"/> is not extended.<br>Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified. |   |                   |  |  |  |                                    |  |
| 12. ACCOUNTING AND APPROPRIATION DATA (If required)  |   |                   |  | Net Increase:  |  | \$3,400.00                         |  |
| See Schedule   |   |                   |  |  |  |                                    |  |
| <b>13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.</b>   |   |                   |  |  |  |                                    |  |
| CHECK ONE  | A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.  |                   |  |  |  |                                    |  |
|  | B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b). |                   |  |  |  |                                    |  |
|  | C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:  |                   |  |  |  |                                    |  |
| X  | D. OTHER (Specify type of modification and authority)<br>FAR 52.232-22 Limitation of Funds  |                   |  |  |  |                                    |  |
| <b>E. IMPORTANT:</b> Contractor <input checked="" type="checkbox"/> is not. <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.  |   |                   |  |  |  |                                    |  |
| 14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)  |   |                   |  |  |  |                                    |  |
| DUNS Number: 038086125<br>The purpose of this modification is to obligate incremental funding in the amount of \$3,400.00 to this task order. The total obligated/funded ceiling amount for this order is \$6,400.00. This order is now fully funded as detailed in Attachment B Summary of Amounts and Ceilings and Attachment B is hereby incorporated (1 page).<br>LIST OF CHANGES:<br>Reason for Modification : Funding Only Action<br>Obligated Amount for this Modification: \$3,400.00<br>New Total Obligated Amount for this Award: \$6,400.00<br>Incremental Funded Amount changed: from<br>Continued ...   |   |                   |  |  |  |                                    |  |
| Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.  |   |                   |  |  |  |                                    |  |
| 15A. NAME AND TITLE OF SIGNER (Type or print)  |   |                   |  | 16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)   |  |                                    |  |
|  |   |                   |  | Michael C. Fox   |  |                                    |  |
| 15B. CONTRACTOR/OFFEROR  |   | 15C. DATE SIGNED  |  | 16B. UNITED STATES OF AMERICA  |  | 16C. DATE SIGNED                   |  |
| (Signature of person authorized to sign)   |   |                   |  | <br>(Signature of Contracting Officer)  |  | ELECTRONIC SIGNATURE<br>08/23/2017 |  |

|                           |   |      |    |
|---------------------------|---|------|----|
| <b>CONTINUATION SHEET</b> | REFERENCE NO. OF DOCUMENT BEING CONTINUED | PAGE | OF |
|                           | EP-W-16-015/1011/001                      | 2    | 2  |

NAME OF OFFEROR OR CONTRACTOR

AMEC ENVIRONMENT &amp; INFRASTRUCTURE, INC.

| ITEM NO.<br>(A) | SUPPLIES/SERVICES<br>(B)  | QUANTITY<br>(C) | UNIT<br>(D) | UNIT PRICE<br>(E) | AMOUNT<br>(F) |
|-----------------|---|-----------------|-------------|-------------------|---------------|
|                 | <p>\$3,000.00 to \$6,400.00</p> <p>CHANGES FOR LINE ITEM NUMBER: 1</p> <p>Obligated Amount for this modification: \$3,400.00</p> <p>Incremental Funded Amount changed from \$3,000.00 to \$6,400.00</p> <p>NEW ACCOUNTING CODE ADDED:</p> <p>Account code:</p> <p>17-18-B-53G3-102A58-2505-1753GP7045-001</p> <p>Beginning FiscalYear 17</p> <p>Ending Fiscal Year 18</p> <p>Fund (Appropriation) B</p> <p>Budget Organization 53G3</p> <p>Program (PRC) 102A58</p> <p>Budget (BOC) 2505</p> <p>Job # (Site/Project)</p> <p>Cost Organization</p> <p>DCN-LineID 1753GP7045-001</p> <p>Quantity: 0</p> <p>Amount: \$3,400.00</p> <p>Percent: 0</p> <p>Subject To Funding: N</p> <p>Payment Address:</p> <p>RTP Finance Center</p> <p>US Environmental Protection Agency</p> <p>RTP-Finance Center (AA216-01)</p> <p>109 TW Alexander Drive</p> <p>www2.epa.gov/financial/contracts</p> <p>Durham NC 27711</p> <p>Payment:</p> <p>RTP Finance Center</p> <p>US Environmental Protection Agency</p> <p>RTP-Finance Center (AA216-01)</p> <p>109 TW Alexander Drive</p> <p>www2.epa.gov/financial/contracts</p> <p>Durham NC 27711</p> <p>FOB: Destination</p> <p>Period of Performance: 07/17/2017 to 07/08/2018</p> |                 |             |                   |               |

**ATTACHMENT B**  
**SUMMARY OF TASK ORDER OBLIGATION/CEILING AMOUNTS**

| Total Funding/Obligation Amounts |                   |                   |                   |
|----------------------------------|-------------------|-------------------|-------------------|
| Period                           | Previous Amount   | This Action       | Amount            |
| Base Period                      | \$3,000.00        | \$3,400.00        | \$6,400.00        |
| <b>Total</b>                     | <b>\$3,000.00</b> | <b>\$3,400.00</b> | <b>\$6,400.00</b> |

| Total Task Order Ceiling |                 |                   |                   |
|--------------------------|-----------------|-------------------|-------------------|
| Period                   | Previous Amount | This Action       | Amount            |
| Base Period              | -               | \$6,400.00        | \$6,400.00        |
| <b>Total</b>             | <b>-</b>        | <b>\$6,400.00</b> | <b>\$6,400.00</b> |

**Note:** This task order is incrementally funded in accordance with contract clause B.5 Limitation of Government's Obligation (EPA-B-32-103).



|  |   |                                    |  |  |  |  |  |
|--|---|------------------------------------|--|--|--|--|--|
| <b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>  |   |                                    |  | 1. CONTRACT ID CODE  |  | PAGE OF PAGES  |  |
|  |   |                                    |  | 1  |  | 2  |  |
| 2. AMENDMENT/MODIFICATION NO.<br>P00002  |   | 3. EFFECTIVE DATE<br>See Block 16C |  | 4. REQUISITION/PURCHASE REQ. NO.<br>PR-OAR-18-00939        |  | 5. PROJECT NO. (If applicable)                         |  |
| 6. ISSUED BY<br>HPOD   |   | CODE<br>HPOD                       |  | 7. ADMINISTERED BY (If other than Item 6)                  |  | CODE   |  |
| HPOD<br>US Environmental Protection Agency<br>William Jefferson Clinton Building<br>1200 Pennsylvania Avenue, N. W.<br>Mail Code: 3803R<br>Washington DC 20460   |   |                                    |  |  |  |  |  |
| 8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)<br><br>AMEC ENVIRONMENT & INFRASTRUCTURE, INC.<br>Attn: LISA DWYER<br>AMEC FOSTER WHEELER ENVIRONMENT & I<br>751 ARBOR WAY, STE 180<br>(b)(4)<br>BLUE BELL PA 194221960  |   |                                    |  | (x)  |  | 9A. AMENDMENT OF SOLICITATION NO.                      |  |
|  |   |                                    |  |  |  | 9B. DATED (SEE ITEM 11)                                |  |
|  |   |                                    |  | x  |  | 10A. MODIFICATION OF CONTRACT/ORDER NO.<br>EP-W-16-015 |  |
|  |   |                                    |  |  |  | 10B. DATED (SEE ITEM 13)                               |  |
| CODE 038086125   |   | FACILITY CODE                      |  | 1011   |  | 07/14/2017   |  |
| <b>11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS</b>   |   |                                    |  |  |  |  |  |
| <input type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers <input type="checkbox"/> is extended. <input type="checkbox"/> is not extended.<br>Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified. |   |                                    |  |  |  |  |  |
| 12. ACCOUNTING AND APPROPRIATION DATA (If required)<br>See Schedule  |   |                                    |  | Net Decrease:  |  | -\$138.73  |  |
| <b>13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.</b>   |   |                                    |  |  |  |  |  |
| CHECK ONE  | A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.  |                                    |  |  |  |  |  |
|  | B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b). |                                    |  |  |  |  |  |
|  | C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:  |                                    |  |  |  |  |  |
| X  | D. OTHER (Specify type of modification and authority)<br>FAR 43.103(b) Unilateral   |                                    |  |  |  |  |  |
| <b>E. IMPORTANT:</b> Contractor <input checked="" type="checkbox"/> is not. <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.  |   |                                    |  |  |  |  |  |
| 14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)  |   |                                    |  |  |  |  |  |
| DUNS Number: 038086125   |   |                                    |  |  |  |  |  |
| The purpose of this modification is to de-obligate remaining funds in the amount of \$138.73.  |   |                                    |  |  |  |  |  |
| All other terms and conditions apply.  |   |                                    |  |  |  |  |  |
| TOCOR: MRURY02   |   |                                    |  |  |  |  |  |
| LIST OF CHANGES:   |   |                                    |  |  |  |  |  |
| Reason for Modification: Funding Only Action   |   |                                    |  |  |  |  |  |
| Obligated Amount for this Modification: -\$138.73  |   |                                    |  |  |  |  |  |
| New Total Obligated Amount for this Award: \$6,261.27  |   |                                    |  |  |  |  |  |
| Incremental Funded Amount changed: from  |   |                                    |  |  |  |  |  |
| \$6,400.00 to \$6,261.27   |   |                                    |  |  |  |  |  |
| Continued ...  |   |                                    |  |  |  |  |  |
| Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.  |   |                                    |  |  |  |  |  |
| 15A. NAME AND TITLE OF SIGNER (Type or print)  |   |                                    |  | 16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) |  |  |  |
|  |   |                                    |  | Tomeka Hall  |  |  |  |
| 15B. CONTRACTOR/OFFEROR  |   | 15C. DATE SIGNED                   |  | 16B. UNITED STATES OF AMERICA                              |  | 16C. DATE SIGNED                                       |  |
| (Signature of person authorized to sign)   |   |                                    |  | [Signature]<br>(Signature of Contracting Officer)          |  | 05/14/2018   |  |

|                    |   |      |    |
|--------------------|---|------|----|
| CONTINUATION SHEET | REFERENCE NO. OF DOCUMENT BEING CONTINUED | PAGE | OF |
|                    | EP-W-16-015/1011/P00002                   | 2    | 2  |

NAME OF OFFEROR OR CONTRACTOR

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

| ITEM NO.<br>(A) | SUPPLIES/SERVICES<br>(B)  | QUANTITY<br>(C) | UNIT<br>(D) | UNIT PRICE<br>(E) | AMOUNT<br>(F) |
|-----------------|---|-----------------|-------------|-------------------|---------------|
|                 | <p>Buyer changed<br/>from Michael C. Fox</p> <p>to Robert H. L. Powell</p> <p>Contracting Officer changed<br/>from Michael C. Fox</p> <p>to Tomeka Hall</p> <p>Type of Bridge Vehicle* (See Help Text for more info) changed to : N</p> <p>Purchase card use considered (See Help Text for more info) changed to : YES: NOT ACCEPTED</p> <p>Contract Office FITARA: Enter estimated dollar value of ANY IT to be purchased under this award, enter \$0 for no IT; upload IT approval in contract file per EPAAG 39.1.1 (See help text for more info) changed to : 0</p> <p>CHANGES FOR LINE ITEM NUMBER: 1</p> <p>Obligated Amount for this Modification: -\$138.73</p> <p>Incremental Funded Amount changed from \$6,400.00 to \$6,261.27</p> <p>FOB changed from Destination to</p> <p>CHANGES FOR ACCOUNTING CODE:<br/>17-18-B-53G3-102A58-2505-1753GP7045-001</p> <p>Amount changed from \$3,400.00 to \$3,261.27</p> <p>Percent changed from 53.125 to 0</p> <p>Delivery: 07/08/2018</p> <p>Delivery Location Code: OAR/OAQPS/CORE</p> <p>OAR/OAQPS/CORE</p> <p>US Environmental Protection Agency</p> <p>Mail Code: C404-02</p> <p>109 TW Alexander Drive</p> <p>Durham NC 27711 USA</p> <p>Payment:</p> <p>RTP Finance Center</p> <p>US Environmental Protection Agency</p> <p>RTP-Finance Center (AA216-01)</p> <p>109 TW Alexander Drive</p> <p>www2.epa.gov/financial/contracts</p> <p>Durham NC 27711</p> <p>Period of Performance: 07/17/2017 to 07/08/2018</p> |                 |             |                   |               |

|  |  |                                    |  |   |  |  |  |
|--|--|------------------------------------|--|---|--|--|--|
| <b>SOLICITATION/CONTRACT/ORDER FOR COMMERCIAL ITEMS</b><br><small>OFFEROR TO COMPLETE BLOCKS 12, 17, 23, 24, &amp; 30</small>  |  |                                    |  | 1. REQUISITION NUMBER<br>PR-OAR-17-01273  |  | PAGE OF<br>1 3   |  |
| 2. CONTRACT NO.<br>EP-W-16-015   |  | 3. AWARD/<br>EFFECTIVE DATE        |  | 4. ORDER NUMBER<br>1012   |  | 5. SOLICITATION NUMBER                                     |  |
| 7. FOR SOLICITATION<br>INFORMATION CALL:   |  | a. NAME<br>Michael Fox             |  | b. TELEPHONE NUMBER<br>(No collect calls)<br>202-564-2550   |  | 8. OFFER DUE DATE/LOCAL TIME<br>ET                         |  |
| 9. ISSUED BY<br>HPOD<br>US Environmental Protection Agency<br>William Jefferson Clinton Building<br>1200 Pennsylvania Avenue, N. W.<br>Mail Code: 3803R<br>Washington DC 20460   |  |                                    |  | 10. THIS ACQUISITION IS <input checked="" type="checkbox"/> UNRESTRICTED OR <input type="checkbox"/> SET ASIDE: % FOR:<br><div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> SMALL BUSINESS<br/> <input type="checkbox"/> HUBZONE SMALL BUSINESS<br/> <input type="checkbox"/> SERVICE-DISABLED VETERAN-OWNED SMALL BUSINESS </div> <div> WOMEN-OWNED SMALL BUSINESS<br/> (WOSB) ELIGIBLE UNDER THE WOMEN-OWNED SMALL BUSINESS PROGRAM<br/> <input type="checkbox"/> EDWOSB<br/> <input type="checkbox"/> 8(A) </div> <div> NAICS: 541620<br/> SIZE STANDARD: \$15.0 </div> </div> |  |  |  |
| 11. DELIVERY FOR FOB DESTINATION UNLESS BLOCK IS MARKED<br><input type="checkbox"/> SEE SCHEDULE   |  | 12. DISCOUNT TERMS                 |  | 13a. THIS CONTRACT IS A RATED ORDER UNDER DPAS (16 CFR 700)   |  | 13b. RATING  |  |
| 15. DELIVER TO<br>OAR/OAQPS/AQAD<br>US Environmental Protection Agency<br>Mail Code: C304-02<br>109 TW Alexander Drive<br>Durham NC 27711  |  | CODE<br>OAR/OAQPS/AQAD             |  | 16. ADMINISTERED BY<br>HPOD<br>US Environmental Protection Agency<br>William Jefferson Clinton Building<br>1200 Pennsylvania Avenue, N. W.<br>Mail Code: 3803R<br>Washington DC 20460   |  | CODE<br>HPOD   |  |
| 17a. CONTRACTOR/<br>OFFEROR<br>AMEC ENVIRONMENT & INFRASTRUCTURE, INC.<br>Attn: LISA DWYER<br>AMEC FOSTER WHEELER ENVIRONMENT & I<br>751 ARBOR WAY, STE 180<br>BLUE BELL PA 194221960  |  | CODE<br>038086125<br>FACILITY CODE |  | 18a. PAYMENT WILL BE MADE BY<br>RTP Finance Center<br>US Environmental Protection Agency<br>RTP-Finance Center (AA216-01)<br>109 TW Alexander Drive<br>www2.epa.gov/financial/contracts<br>Durham NC 27711  |  |  |  |
| TELEPHONE NO. (b)(4)   |  |                                    |  | 18b. SUBMIT INVOICES TO ADDRESS SHOWN IN BLOCK 18a UNLESS BLOCK BELOW IS CHECKED <input type="checkbox"/> SEE ADDENDUM  |  |  |  |
| 19. ITEM NO.   |  |                                    |  | 20. SCHEDULE OF SUPPLIES/SERVICES   |  | 21. QUANTITY   |  |
|  |  |                                    |  |   |  | 22. UNIT   |  |
|  |  |                                    |  |   |  | 23. UNIT PRICE   |  |
|  |  |                                    |  |   |  | 24. AMOUNT   |  |
| DUNS Number: 038086125<br>This task order is issued in accordance with Task Order Ordering Procedures and hereby incorporates the base contract terms and conditions by reference. The effective date for performance to commence is July 9, 2017.<br><br>The Contractor shall perform in accordance with the Attachment A Statement of Work (6 pages) and the accepted technical proposal and cost estimate dated June 13, 2017 (13 pages) in the amount of<br>(Use Reverse and/or Attach Additional Sheets as Necessary) |  |                                    |  |   |  |  |  |
| 25. ACCOUNTING AND APPROPRIATION DATA<br>See Schedule  |  |                                    |  |   |  | 26. TOTAL AWARD AMOUNT (For Govt. Use Only)<br>\$46,193.00 |  |
| <input type="checkbox"/> 27a. SOLICITATION INCORPORATES BY REFERENCE FAR 52.212-1, 52.212-4, FAR 52.212-3 AND 52.212-5 ARE ATTACHED. ADDENDA <input type="checkbox"/> ARE <input type="checkbox"/> ARE NOT ATTACHED.<br><input checked="" type="checkbox"/> 27b. CONTRACT/PURCHASE ORDER INCORPORATES BY REFERENCE FAR 52.212-4, FAR 52.212-5 IS ATTACHED. ADDENDA <input type="checkbox"/> ARE <input checked="" type="checkbox"/> ARE NOT ATTACHED.  |  |                                    |  |   |  |  |  |
| <input checked="" type="checkbox"/> 28. CONTRACTOR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN 1 COPIES TO ISSUING OFFICE. CONTRACTOR AGREES TO FURNISH AND DELIVER ALL ITEMS SET FORTH OR OTHERWISE IDENTIFIED ABOVE AND ON ANY ADDITIONAL SHEETS SUBJECT TO THE TERMS AND CONDITIONS SPECIFIED.   |  |                                    |  | <input type="checkbox"/> 29. AWARD OF CONTRACT: _____ OFFER DATED _____ YOUR OFFER ON SOLICITATION (BLOCK 5), INCLUDING ANY ADDITIONS OR CHANGES WHICH ARE SET FORTH HEREIN, IS ACCEPTED AS TO ITEMS:   |  |  |  |
| 30a. SIGNATURE OF OFFEROR/CONTRACTOR<br>   |  |                                    |  | 31a. UNITED STATES OF AMERICA (SIGNATURE OF CONTRACTING OFFICER)<br>  |  |  |  |
| 30b. NAME AND TITLE OF SIGNER (Type or print)<br>Kemp Howell - Project Manager   |  | 30c. DATE SIGNED<br>6/29/17        |  | 31b. NAME OF CONTRACTING OFFICER (Type or print)<br>Michael C. Fox  |  | 31c. DATE SIGNED<br>06/29/2017                             |  |

| 19.<br>ITEM NO. | 20.<br>SCHEDULE OF SUPPLIES/SERVICES   | 21.<br>QUANTITY | 22.<br>UNIT | 23.<br>UNIT PRICE | 24.<br>AMOUNT |
|-----------------|--|-----------------|-------------|-------------------|---------------|
| 0001            | <p>\$46,194.00.</p> <p>This is a Time-and-Materials (T&amp;M) task order with a total ceiling price of \$46,193.00, which the Contractor is not authorized to exceed. The Contractor exceeds at its own risk.</p> <p>The total obligated/funded ceiling amount for this order is currently \$40,000.00. This order is incrementally funded as detailed in Attachment B Summary of Amounts and Ceilings and Attachment B is hereby incorporated (1 page).</p> <p>Contracting Officer's Representative (COR) for this task order:<br/>Melissa Puchalski, (202) 343-9882,<br/>Puchalski.Melissa@epa.gov</p> <p>Alternate COR:<br/>Gregory Beachley, (202) 343-9621,<br/>Beachley.Gregory@epa.gov</p> <p>The services of this order are for severable.<br/>TOCOR: Melissa Puchalski<br/>Period of Performance: 07/09/2017 to 07/08/2018</p> <p>Characterization of Reduced Nitrogen at IMPROVE and CSN Monitoring Sites</p> <p>Continued ...</p> |                 |             |                   |               |

32a. QUANTITY IN COLUMN 21 HAS BEEN

☐ RECEIVED    ☐ INSPECTED    ☐ ACCEPTED, AND CONFORMS TO THE CONTRACT, EXCEPT AS NOTED: \_\_\_\_\_

|   |                        |                                      |   |                       |
|---|------------------------|--------------------------------------|---|-----------------------|
| 32b. SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE          |                        | 32c. DATE                            | 32d. PRINTED NAME AND TITLE OF AUTHORIZED GOVERNMENT REPRESENTATIVE                               |                       |
| 32e. MAILING ADDRESS OF AUTHORIZED GOVERNMENT REPRESENTATIVE    |                        |                                      | 32f. TELEPHONE NUMBER OF AUTHORIZED GOVERNMENT REPRESENTATIVE                                     |                       |
|   |                        |                                      | 32g. E-MAIL OF AUTHORIZED GOVERNMENT REPRESENTATIVE   |                       |
| 33. SHIP NUMBER   | 34. VOUCHER NUMBER     | 35. AMOUNT VERIFIED<br>CORRECT FOR   | 36. PAYMENT   | 37. CHECK NUMBER      |
| <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL |                        |                                      | <input type="checkbox"/> COMPLETE <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL |                       |
| 38. S/R ACCOUNT NUMBER  | 39. S/R VOUCHER NUMBER | 40. PAID BY                          |   |                       |
| 41a. I CERTIFY THIS ACCOUNT IS CORRECT AND PROPER FOR PAYMENT   |                        | 42a. RECEIVED BY ( <i>Print</i> )    |   |                       |
| 41b. SIGNATURE AND TITLE OF CERTIFYING OFFICER                  |                        | 42b. RECEIVED AT ( <i>Location</i> ) |   |                       |
|   |                        | 42c. DATE REC'D (YY/MM/DD)           |   | 42d. TOTAL CONTAINERS |

NAME OF OFFEROR OR CONTRACTOR  
AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

| ITEM NO.<br>(A) | SUPPLIES/SERVICES<br>(B)  | QUANTITY<br>(C) | UNIT<br>(D) | UNIT PRICE<br>(E) | AMOUNT<br>(F) |
|-----------------|---|-----------------|-------------|-------------------|---------------|
|                 | Accounting Info:<br>17-E1-53GS-102A04XPM-4183-1753PM7090-001 BFY: 17<br>Fund: E1 Budget Org: 53GS Program (PRC):<br>102A04XPM Budget (BOC): 4183 DCN - Line ID:<br>1753PM7090-001<br>Funding Flag: Partial<br>Funded: \$40,000.00 |                 |             |                   |               |

## **ATTACHMENT A**

### **STATEMENT OF WORK**

**Title:** Characterization of Reduced Nitrogen at IMPROVE and CSN Monitoring Sites

**Contractor:** Amec Foster Wheeler

**Contract #:** EP-W-16-015

**Task Order #:** 1012

**Period of Performance:** 7/9/2017 to 7/8/2018

### **EPA Key Personnel**

**Task Order Project Officer (TOPO)/Contract Level Project Officer (PO):**

Melissa Puchalski  
Clean Air Markets Division (OAP/OAR/CAMD)  
1200 Pennsylvania Ave., NW  
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Washington, DC 20460  
*phone:* (202) 343-9621  
*email:* Beachley.gregory@epa.gov

**Contracting Officer (CO):**

Michael Fox  
Contracting Officer  
Administrative Contract Service Center  
1200 Pennsylvania Ave N.W.  
Mail Code 3803R  
Washington DC 20460  
*phone:* (202) 564-2550  
*email:* fox.michael@epa.gov

## STATEMENT OF WORK

### I. INTRODUCTION

The Clean Air Status and Trends Network (CASTNET) is a long-term environmental monitoring network that measures changes in ambient air quality and assesses atmospheric deposition over broad geographic regions of the U.S. (<https://www.epa.gov/castnet>). Operating since 1987, CASTNET has evolved into a robust regional monitoring program which currently consists of approximately 95 monitoring stations nationwide. The Environmental Protection Agency (EPA) coordinates the operation of the network in cooperation with numerous federal, tribal, state and local partners.

The primary monitoring objectives of CASTNET are to:

- Provide high quality data on atmospheric deposition, rural ground level ozone and other forms of atmospheric pollution;
- Support the primary and secondary ozone National Ambient Air Quality Standards (NAAQS) and provide data on NAAQS compliance in rural areas;
- Monitor the status and trends in regional air quality and atmospheric deposition;
- Assess and report on geographic patterns and long-term, temporal trends in ambient air pollution and atmospheric deposition;
- Improve our understanding of Particulate Matter (PM) and ozone formation;
- Validate and improve atmospheric models;
- Provide data for health-based research and epidemiology studies;
- Assess the effectiveness of EPA's emission reduction programs; and
- Support science and ecosystem studies.

CASTNET sites measure weekly average concentrations of sulfate ( $\text{SO}_4^{2-}$ ), nitrate ( $\text{NO}_3^-$ ), ammonium ( $\text{NH}_4^+$ ), sulfur dioxide ( $\text{SO}_2$ ), nitric acid ( $\text{HNO}_3$ ), chloride ( $\text{Cl}^-$ ) and the base cations ( $\text{Na}^+$ ,  $\text{K}^+$ ,  $\text{Mg}^{2+}$  and  $\text{Ca}^{2+}$ ) using a 3-stage filter pack. In addition, each site may make ancillary measurements, including hourly ozone ( $\text{O}_3$ ), hourly meteorology, ammonia ( $\text{NH}_3$ ) gas using passive devices, and trace-level gases. Trace-level gas monitors include reactive oxidized nitrogen ( $\text{NO}_y$ ), nitric oxide ( $\text{NO}$ ), sulfur dioxide ( $\text{SO}_2$ ) and carbon monoxide ( $\text{CO}$ ). CASTNET  $\text{O}_3$ , meteorological, and trace gas measurements follow the requirements in the Code of Federal Regulations (CFR) and EPA's Quality Assurance Handbook.

### II. Background

The Interagency Monitoring of Protected Visual Environments (IMPROVE) and Chemical Speciation (CSN) networks have provided two decades of routine particulate matter speciation data that support regional haze and PM NAAQS programs. The Clean Air Status and Trends Network (CASTNET) and National Atmospheric Deposition Program (NADP) have provide routine measurements of particulate, gaseous and wet deposition to support acid deposition programs. Over this period the chemical composition of the ambient atmosphere has changed markedly from one dominated by nitrate, sulfate and carbonaceous aerosols, and their associated precursor gases ( $\text{NO}_x$ ,  $\text{SO}_x$ , VOCs, SVOCs), to an atmospheric mixture that includes a significant amount of reduced inorganic nitrogen – particulate ammonium ( $\text{NH}_4^+$ ) and its precursor gas, ammonia ( $\text{NH}_3$ ). The magnitude of this change is reflected by a nationwide shift in the atmospheric nitrogen budget from one dominated by inorganic oxidized compounds, to one where reduced inorganic nitrogen species ( $\text{NH}_x = \text{NH}_3 + \text{NH}_4^+$ ) now have similar or greater concentrations. Total atmospheric nitrogen compounds are still primarily in inorganic forms, but have significant contributions from organically bound nitrogen (both reduced and oxidized



forms). Looking forward, the shift to larger relative contributions of atmospheric reduced inorganic nitrogen is projected to continue as existing rules and technologies continue to decrease NO<sub>x</sub> emissions from the transportation and energy generation sectors with an expected modest increase in NH<sub>3</sub> emissions. As the atmospheric emissions and composition evolve in response to rules, our networks must evolve to best inform decision makers to address such questions as:

1. What atmospheric species and emission sources contribute to PM, regional haze and nitrogen deposition?
2. What options in emissions reductions are available to reduce PM, regional haze and nitrogen deposition?

To answer these questions, it becomes necessary to characterize reduced nitrogen emission sources and atmospheric composition. Our networks are relatively well positioned to characterize inorganic oxides of nitrogen, but poorly positioned to characterize the increasingly dominant reduced component of atmospheric nitrogen. This severe limitation is affecting our ability to understand and mitigate the causes of excess PM, haze and nitrogen deposition, in which reduced nitrogen compounds are playing an increasingly important role.

### **III. PURPOSE**

The primary purpose of this task order is to characterize reduced nitrogen ( $\text{NH}_x = \text{NH}_3 + \text{NH}_4^+$ ) using existing network methodologies as a cost-effective, efficient way to characterize a significant contributor to PM formation, visibility degradation, and total nitrogen deposition. This study is a follow-on to the study performed by Chen et. al. (2014) in the western United States. This study will demonstrate if acid-impregnated filters within the IMPROVE module and the CSN Super Speciation Air Sampling System (SASS) can provide accurate NH<sub>x</sub> concentrations in humid climates with low to moderate ambient NH<sub>3</sub> concentrations (Duke Forest, North Carolina and Gainesville, Florida) for approximately six months. The 1:3 sample schedule will be maintained for the CSN and IMPROVE samplers while a URG Annular Denuder System (ADS) will be used as a reference method on the same 1:3 day schedule at the two locations.

Objectives of the study:

- Test the NH<sub>x</sub> monitoring method in hot and humid environments with low to moderate NH<sub>3</sub> concentrations.
- Assess sources of uncertainty in the measurement
- Develop standard sampling protocols that can be employed in a routine network.

### **IV. CONTRACT LEVEL STATEMENT OF WORK REFERENCE**

The tasks to be performed under this task order are consistent with the activities authorized in CLIN 22 of the contract's Statement of Work.

### **V. TECHNICAL DIRECTION**

#### **1. Prepare a Technical Proposal & Cost Estimate**

The Contractor shall prepare a Task Order Proposal in accordance with the terms and conditions of contract clauses B.2 entitled Fixed Rates for Services – Indefinite delivery/Indefinite quantity contract.

#### **2. Operation and Calibration of the Measurement Systems**

Under Task Order 12, the contractor installed a CSN Super SASS sampler, an IMPROVE PM<sub>2.5</sub> system and a URG annular denuder system. Each system was calibrated prior to the start of the sampling period in May 2017.



The Contractor shall calibrate the flow system for the SASS, IMPROVE and URG sampling systems at the Gainesville facility once during the 6-month sampling period (i.e. after 3-months), and at the completion of the study (Task 5).

The contractor shall perform sample change outs according to the SOPs on the 1:3 day sample schedule provided in Task Order 12. The Duke Forest, NC site will follow the same sample schedule. Routine monthly leak checks shall be performed on each sampling system.

### 3. Preparing and Extracting Samples

The contractor shall prepare  $\text{H}_3\text{PO}_3$ -impregnated filters (37 mm cellulose and 47 mm cellulose) for the Duke Forest and Gainesville sites following the protocols described in Chen et. al. (2014). Following sample collection, the impregnated cellulose filters shall be extracted with deionized (DI) water according to the standard IMPROVE method at: <http://vista.cira.colostate.edu/Improve/wp-content/uploads/2016/07/IMPROVE-Anion-Cation-Analysis-by-Ion-Chromatography-SOP-2016.pdf>

The MgO denuders will be provided by EPA. The contractor shall coat the MgO honeycomb denuders following the SOP provided, but not extract them. The MgO denuder shall be cleaned and recoated after 3 months. The MgO denuder SOP can be found here:

<https://www3.epa.gov/ttn/amtic/files/ambient/pm25/spec/RTIMgOHoneycombDenuderSOP.pdf>

The contractor shall prepare 3 denuders for the ADS (one  $\text{Na}_2\text{CO}_3$  and two  $\text{H}_3\text{PO}_3$ -coated denuders). The two ( $\text{H}_3\text{PO}_3$ )-coated denuders will be extracted. The contractor shall extract the URG ADS denuders and  $\text{H}_3\text{PO}_3$ -impregnated filters using the recommendations described in EPA's Compendium of Methods for Inorganic Air Pollutants IO-4.2 (<https://www3.epa.gov/ttn/amtic/files/ambient/inorganic/mthd-4-2.pdf>). The  $\text{H}_3\text{PO}_3$  denuders shall be extracted with DI water. The  $\text{Na}_2\text{CO}_3$ -coated denuder shall be cleaned and recoated monthly.

The nylon filter from the CSN SuperSASS shall be extracted for particulate  $\text{NH}_4^+$  using the procedure described in the CSN SOP located here: <https://www3.epa.gov/ttn/amtic/files/ambient/pm25/spec/pm25cationsop.pdf>.

All extracts should be stored under refrigeration until the analysis is performed.

Laboratory and field blanks shall be prepared and analyzed routinely as described in Table 1 below.

### 4. Sample Analysis

The contractor shall analyze the cellulose filter extracts and denuder extracts from the Gainesville and Duke Forest sites by IC. The Duke Forest operator will ship the denuder and filter extracts to the contractor's facility.

The contractor shall analyze the extracts using the method described in the SOP for  $\text{PM}_{2.5}$  Cation Analysis found here: <https://www3.epa.gov/ttn/amtic/files/ambient/pm25/spec/pm25cationsop.pdf>.

Laboratory analysis results shall be converted to concentrations using the total sample volume recorded in a database.

Laboratory analysis results shall be converted to concentrations using the total sample volume and recorded in the database.

Table 1

| Network/Sampler | Channels | Schedule | Laboratory Blank | Trip Blank | Field Blank |
|-----------------|----------|----------|------------------|------------|-------------|
|-----------------|----------|----------|------------------|------------|-------------|

|                 |   |                  |                      |                       |                       |
|-----------------|---|------------------|----------------------|-----------------------|-----------------------|
| CSN/SuperSASS   | Channel 1: H <sub>3</sub> PO <sub>3</sub> filter (47 mm)          | 1:3 day sampling | Weekly               | Monthly               | Monthly               |
|                 | Channel 2: MgO denuder, 47 mm nylon filter                        | 1:3 day sampling | Weekly (filter only) | Monthly (filter only) | Monthly (filter only) |
| IMPROVE Sampler | Channel B modified: H <sub>3</sub> PO <sub>3</sub> filter (37 mm) | 1:3 day sampling | Weekly               | Monthly               | Monthly               |
| URG             | H <sub>3</sub> PO <sub>3</sub> Acid denuder (2)                   | 1:3 day sampling | Weekly               | Monthly               | Monthly               |
|                 | Nylon Filter (47 mm)  | 1:3 day sampling | Weekly               | Monthly               | Monthly               |
|                 | Na <sub>2</sub> CO <sub>3</sub> denuder                           |                  | None                 | None                  | None                  |

## 5. Calibrate and Uninstall Measurement Systems

After the 6-month sampling period the contractor shall perform a final calibration on the CSN Super SASS, IMPROVE PM<sub>2.5</sub> sampler and the URG denuder system. The contractor shall uninstall the equipment at the Gainesville facility. The contractor shall return the borrowed equipment to OAQPS and/or Colorado State University.

## VI. DELIVERABLES AND SCHEDULE

### 1. Proposal

The contractor shall deliver a Task Order Proposal in accordance with clause B.7 Task Order Ordering Procedures of the contract. The proposal shall be submitted 10 days after receipt of the SOW.

### 2. Monthly Progress Report

The contractor shall prepare and submit a monthly progress report by the 15<sup>th</sup> of each month summarizing the progress made, issues encountered or expected, work planned for the next reporting period and costs. These reports shall comply with contract clauses F.1 Monthly Progress Report. Reports and F-5 Reports of Work shall be delivered electronically.

### 3. Database

The contractor shall deliver a database submittal with valid data and all QA/QC data reported during the field campaign. Results from the previous 30-day period shall be submitted no later than 30 days after the last sample of the month was taken. The database shall be delivered on the last day of the month.

## Distribution of Deliverables:

| Addressee                               | Copies |
|---|--------|
| EPA Contracting Officer (Mike Fox)      | 1      |
| EPA Project Officer (Melissa Puchalski) | 1      |
| EPA Alternate (Gregory Beachley)        | 1      |
| EPA Technical Advisor (John T Walker)   | 1      |
| EPA Technical Advisor (Joann Rice)      | 1      |
| EPA Technical Advisor (Rich Scheffe)    | 1      |

## VII. References

Chen, X., Day, D., Schichtel, B., Malm, W., Matzoll, A.K., Mojica, J., McDade, C.E., Hardison, E.D., Hardison, D.L, Walters, S., Van De Water, M., and Collett Jr., J.L. (2014) Seasonal ambient ammonia and

ammonium concentrations in a pilot IMPROVE NH<sub>x</sub> monitoring network in the western United States. Atmos. Envir. 91, 118-126.

RTI International, Standard Operating Procedures for Determination of Anions and/or Cations Extracted from Nylon Filters by Ion Chromatography (IC), Rev. 5. Mar. 3, 2016 (<http://vista.cira.colostate.edu/Improve/wp-content/uploads/2016/07/IMPROVE-Anion-Cation-Analysis-by-Ion-Chromatography-SOP-2016.pdf>).

RTI International, Standard Operating Procedure for Coating and Extracting Denuders for Capture of Ammonia and Its Measurement, Rev. 0. Feb. 14, 2008  
(<https://www3.epa.gov/ttn/amtic/files/ambient/pm25/spec/RTIDenudersCaptureAmmFINAL.pdf>).

RTI International, Standard Operating Procedures for Coating Aluminum Honeycomb Denuders with Magnesium Oxide, Rev. 4. Feb. 17, 2009  
(<https://www3.epa.gov/ttn/amtic/files/ambient/pm25/spec/RTIMgOHoneycombDenuderSOP.pdf>).

RTI International, Standard Operating Procedure for PM<sub>2.5</sub> Cation Analysis, Rev. 7. Aug. 25, 2009  
(<https://www3.epa.gov/ttn/amtic/files/ambient/pm25/spec/pm25cationsop.pdf>).

US EPA, Model SASS<sup>TM</sup> & SuperSASS<sup>TM</sup> PM<sub>2.5</sub> Ambient Chemical Speciation Samplers: Field Operation Manual, Doc. #SASS-9800 Rev. G. Dec. 27, 2001  
(<https://www3.epa.gov/ttnamti1/files/spectraining/MetOneSASSFOM.pdf>).

US EPA, Compendium Method IO-4.2: Determination of Reactive Acidic and Basic Gases and Strong Acidity of Atmospheric Fine Particles (< 2.5 μm). Jun. 1999  
(<https://www3.epa.gov/ttn/amtic/files/ambient/inorganic/mthd-4-2.pdf>).

**ATTACHMENT B**  
**SUMMARY OF TASK ORDER OBLIGATION/CEILING AMOUNTS**

| Total Funding/Obligation Amounts |                 |                    |                    |
|----------------------------------|-----------------|--------------------|--------------------|
| Period                           | Previous Amount | This Action        | Amount             |
| Base Period                      | -               | \$40,000.00        | \$40,000.00        |
| <b>Total</b>                     | -               | <b>\$40,000.00</b> | <b>\$40,000.00</b> |

| Total Task Order Ceiling |                 |                    |                    |
|--------------------------|-----------------|--------------------|--------------------|
| Period                   | Previous Amount | This Action        | Amount             |
| Base Period              | -               | \$46,193.00        | \$46,193.00        |
| <b>Total</b>             | -               | <b>\$46,193.00</b> | <b>\$46,193.00</b> |

**Note:** This task order is incrementally funded in accordance with contract clause B.5 Limitation of Government's Obligation (EPA-B-32-103).

|  |  |   |  |  |  |
|--|--|---|--|--|--|
| <b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>  |  | 1. CONTRACT ID CODE                       |  | PAGE OF PAGES  |  |
|  |  |   |  | 1 2  |  |
| 2. AMENDMENT/MODIFICATION NO.<br>P00001  |  | 3. EFFECTIVE DATE<br>See Block 16C        |  | 4. REQUISITION/PURCHASE REQ. NO.<br>PR-OAR-17-01680            |  |
| 6. ISSUED BY<br>HPOD   |  | 7. ADMINISTERED BY (If other than Item 6) |  | 5. PROJECT NO. (If applicable)                                 |  |
| HPOD<br>US Environmental Protection Agency<br>William Jefferson Clinton Building<br>1200 Pennsylvania Avenue, N. W.<br>Mail Code: 3803R<br>Washington DC 20460   |  |   |  |  |  |
| 8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)  |  | (x)                                       |  | 9A. AMENDMENT OF SOLICITATION NO.                              |  |
| AMEC ENVIRONMENT & INFRASTRUCTURE, INC.<br>Attn: LISA DWYER<br>AMEC FOSTER WHEELER ENVIRONMENT & I<br>751 ARBOR WAY, STE 180<br>(b)(4)<br>BLUE BELL PA 194221960 |  |   |  | 9B. DATED (SEE ITEM 11)  |  |
|  |  | x   |  | 10A. MODIFICATION OF CONTRACT/ORDER NO.<br>EP-W-16-015<br>1012 |  |
|  |  |   |  | 10B. DATED (SEE ITEM 13)<br>06/29/2017                         |  |
| CODE 038086125   |  | FACILITY CODE                             |  |  |  |

**11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS**

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.  
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning \_\_\_\_\_ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required) Net Increase: \$6,193.00  
See Schedule

**13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

|           |   |
|-----------|---|
| CHECK ONE | A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.  |
|           | B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b). |
|           | C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:  |
| X         | D. OTHER (Specify type of modification and authority)<br>FAR 52.232-22 Limitation of Funds  |

**E. IMPORTANT:** Contractor ☒ is not. ☐ is required to sign this document and return \_\_\_\_\_ copies to the issuing office.

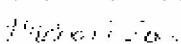
**14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)**

The purpose of this modification is to obligate incremental funding in the amount of \$6,193.00 this task order. The total obligated/funded ceiling amount for this order is \$46,193.00. This order is now fully funded as detailed in Attachment B Summary of Amounts and Ceilings and Attachment B is hereby incorporated (1 page).

**LIST OF CHANGES:**

Reason for Modification : Funding Only Action  
Obligated Amount for this Modification: \$6,193.00  
New Total Obligated Amount for this Award: \$46,193.00  
Incremental Funded Amount changed: from  
Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.

|   |                  |   |                  |
|---|------------------|---|------------------|
| 15A. NAME AND TITLE OF SIGNER (Type or print) |                  | 16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)  |                  |
|   |                  | Michael C. Fox  |                  |
| 15B. CONTRACTOR/OFFEROR                       | 15C. DATE SIGNED | 16B. UNITED STATES OF AMERICA   | 16C. DATE SIGNED |
| (Signature of person authorized to sign)      |                  | <br>ELECTRONIC SIGNATURE<br>(Signature of Contracting Officer) | 10/25/2017       |

|                           |   |      |    |
|---------------------------|---|------|----|
| <b>CONTINUATION SHEET</b> | REFERENCE NO. OF DOCUMENT BEING CONTINUED | PAGE | OF |
|                           | EP-W-16-015/1012/P00001                   | 2    | 2  |

NAME OF OFFEROR OR CONTRACTOR

AMEC ENVIRONMENT &amp; INFRASTRUCTURE, INC.

| ITEM NO.<br>(A) | SUPPLIES/SERVICES<br>(B)   | QUANTITY<br>(C) | UNIT<br>(D) | UNIT PRICE<br>(E) | AMOUNT<br>(F) |
|-----------------|--|-----------------|-------------|-------------------|---------------|
|                 | <p>\$40,000.00 to \$46,193.00</p> <p>CHANGES FOR LINE ITEM NUMBER: 1</p> <p>Obligated Amount for this modification: \$6,193.00</p> <p>Incremental Funded Amount changed from \$40,000.00 to \$46,193.00</p> <p>NEW ACCOUNTING CODE ADDED:</p> <p>Account code:</p> <p>17-E1-53GS-102A04XPM-4183-1753PM7130-001</p> <p>Beginning FiscalYear 17</p> <p>Ending Fiscal Year</p> <p>Fund (Appropriation) E1</p> <p>Budget Organization 53GS</p> <p>Program (PRC) 102A04XPM</p> <p>Budget (BOC) 4183</p> <p>Job # (Site/Project)</p> <p>Cost Organization</p> <p>DCN-LineID 1753PM7130-001</p> <p>Amount: \$6,193.00</p> <p>Subject To Funding: N</p> <p>Payment Address:</p> <p>RTP Finance Center</p> <p>US Environmental Protection Agency</p> <p>RTP-Finance Center (AA216-01)</p> <p>109 TW Alexander Drive</p> <p>www2.epa.gov/financial/contracts</p> <p>Durham NC 27711</p> <p>Payment:</p> <p>RTP Finance Center</p> <p>US Environmental Protection Agency</p> <p>RTP-Finance Center (AA216-01)</p> <p>109 TW Alexander Drive</p> <p>www2.epa.gov/financial/contracts</p> <p>Durham NC 27711</p> <p>FOB: Destination</p> <p>Period of Performance: 07/09/2017 to 07/08/2018</p> |                 |             |                   |               |

**ATTACHMENT B**  
**SUMMARY OF TASK ORDER OBLIGATION/CEILING AMOUNTS**

| Total Funding/Obligation Amounts |                    |                   |                    |
|----------------------------------|--------------------|-------------------|--------------------|
| Period                           | Previous Amount    | This Action       | Amount             |
| Base Period                      | \$40,000.00        | \$6,193.00        | \$46,193.00        |
| <b>Total</b>                     | <b>\$40,000.00</b> | <b>\$6,193.00</b> | <b>\$46,193.00</b> |

| Total Task Order Ceiling |                 |                    |                    |
|--------------------------|-----------------|--------------------|--------------------|
| Period                   | Previous Amount | This Action        | Amount             |
| Base Period              | -               | \$46,193.00        | \$46,193.00        |
| <b>Total</b>             | <b>-</b>        | <b>\$46,193.00</b> | <b>\$46,193.00</b> |

**Note:** This task order is incrementally funded in accordance with contract clause B.5 Limitation of Government's Obligation (EPA-B-32-103).





|                           |   |      |    |
|---------------------------|---|------|----|
| <b>CONTINUATION SHEET</b> | REFERENCE NO. OF DOCUMENT BEING CONTINUED | PAGE | OF |
|                           | EP-W-16-015/1012/P00002                   | 2    | 2  |

NAME OF OFFEROR OR CONTRACTOR

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

| ITEM NO.<br>(A) | SUPPLIES/SERVICES<br>(B)  | QUANTITY<br>(C) | UNIT<br>(D) | UNIT PRICE<br>(E) | AMOUNT<br>(F) |
|-----------------|---|-----------------|-------------|-------------------|---------------|
|                 | <p>Obligated Amount for this Modification: -\$1.59<br/>Incremental Funded Amount changed from \$46,193.00 to \$46,191.41<br/>FOB changed from Destination to</p> <p>CHANGES FOR ACCOUNTING CODE:<br/>17-E1-53GS-102A04XPM-4183-1753PM7090-001<br/>Amount changed from \$40,000.00 to \$39,998.41</p> <p>Payment:<br/>RTP Finance Center<br/>US Environmental Protection Agency<br/>RTP-Finance Center (AA216-01)<br/>109 TW Alexander Drive<br/>www2.epa.gov/financial/contracts<br/>Durham NC 27711</p> <p>Period of Performance: 07/09/2017 to 07/08/2018</p> |                 |             |                   |               |

|  |   |  |   |   |  |  |   |
|--|---|--|---|---|--|--|---|
| <b>SOLICITATION/CONTRACT/ORDER FOR COMMERCIAL ITEMS</b><br><i>OFFEROR TO COMPLETE BLOCKS 12, 17, 23, 24, &amp; 30</i>  |   |  |   | 1. REQUISITION NUMBER<br><b>PR-OAR-18-00215</b>   |  | PAGE OF<br><b>1 3</b>  |   |
| 2. CONTRACT NO.<br><b>EP-W-16-015</b>  |   |  | 3. AWARD/ EFFECTIVE DATE<br><b>1013</b> |   | 4. ORDER NUMBER  |  | 5. SOLICITATION NUMBER                    |
| 7. FOR SOLICITATION INFORMATION CALL:  |   |  | 8. NAME<br><b>Michael Fox</b>           |   | 6. TELEPHONE NUMBER (No collect calls)<br><b>202-564-2550</b>  |  | 9. OFFER DUE DATE/LOCAL TIME<br><b>ET</b> |
| 9. ISSUED BY<br><b>HPOD</b><br>US Environmental Protection Agency<br>William Jefferson Clinton Building<br>1200 Pennsylvania Avenue, N. W.<br>Mail Code: 3803R<br>Washington DC 20460  |   |  | CODE <b>HPOD</b>                        |   | 10. THIS ACQUISITION IS <input checked="" type="checkbox"/> UNRESTRICTED OR <input type="checkbox"/> SET ASIDE: % FOR:<br><br><input type="checkbox"/> SMALL BUSINESS<br><input type="checkbox"/> WOMEN-OWNED SMALL BUSINESS<br><input type="checkbox"/> (WOSB) ELIGIBLE UNDER THE WOMEN-OWNED SMALL BUSINESS PROGRAM<br><input type="checkbox"/> EDWOSB<br><input type="checkbox"/> SERVICE-DISABLED VETERAN-OWNED SMALL BUSINESS<br><input type="checkbox"/> 8(A)<br><b>NAICS: 541620</b><br><br><b>SIZE STANDARD \$15.0</b> |  |   |
| 11. DELIVERY FOR FOB DESTINATION UNLESS BLOCK IS MARKED<br><input type="checkbox"/> SEE SCHEDULE   |   | 12. DISCOUNT TERMS                     |   | 13a. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700)   |  | 13b. RATING  |   |
| 15. DELIVER TO<br><b>OAR/OAQPS/AQAD</b><br>US Environmental Protection Agency<br>Mail Code: C304-02<br>109 TW Alexander Drive<br>Durham NC 27711   |   | CODE <b>OAR/OAQPS/AQAD</b>             |   | 16. ADMINISTERED BY<br><b>HPOD</b><br>US Environmental Protection Agency<br>William Jefferson Clinton Building<br>1200 Pennsylvania Avenue, N. W.<br>Mail Code: 3803R<br>Washington DC 20460                      |  | CODE <b>HPOD</b>   |   |
| 17a. CONTRACTOR/OFFEROR<br><b>AMEC ENVIRONMENT &amp; INFRASTRUCTURE, INC.</b><br>Attn: LISA DWYER<br><b>AMEC FOSTER WHEELER ENVIRONMENT &amp; I</b><br>751 ARBOR WAY, STE 180<br>BLUE BELL PA 194221960  |   | CODE <b>038086125</b><br>FACILITY CODE |   | 18a. PAYMENT WILL BE MADE BY<br><b>RTP Finance Center</b><br>US Environmental Protection Agency<br>RTP-Finance Center (AA216-01)<br>109 TW Alexander Drive<br>www2.epa.gov/financial/contracts<br>Durham NC 27711 |  | CODE <b>RTP FMC</b>  |   |
| TELEPHONE NO. <b>(b)(4)</b>  |   |  |   | 17b. CHECK IF REMITTANCE IS DIFFERENT AND PUT SUCH ADDRESS IN OFFER   |  |  |   |
|  |   |  |   | 18b. SUBMIT INVOICES TO ADDRESS SHOWN IN BLOCK 18a UNLESS BLOCK BELOW IS CHECKED <input type="checkbox"/> SEE ADDENDUM  |  |  |   |
| 19. ITEM NO.   | 20. SCHEDULE OF SUPPLIES/SERVICES   |  |   | 21. QUANTITY  | 22. UNIT   | 23. UNIT PRICE   | 24. AMOUNT                                |
|  | DUNS Number: 038086125<br>This task order is issued in accordance with Task Order Ordering Procedures and hereby incorporates the base contract terms and conditions by reference. The effective date for performance to commence is January 10, 2018.<br><br>The Contractor shall perform in accordance with the Attachment A Statement of Work (4 pages) and the accepted technical proposal and cost estimate dated January 3, 2018 (6 pages) in the amount of<br>(Use Reverse and/or Attach Additional Sheets as Necessary) |  |   |   |  |  |   |
| 25. ACCOUNTING AND APPROPRIATION DATA<br>See Schedule  |   |  |   |   |  | 26. TOTAL AWARD AMOUNT (For Govt Use Only)<br><b>\$51,663.00</b> |   |
| 27a. SOLICITATION INCORPORATES BY REFERENCE FAR 52.212-1, 52.212-4, FAR 52.212-3, AND 52.212-5 ARE ATTACHED. ADDENDA <input type="checkbox"/> ARE <input type="checkbox"/> ARE NOT ATTACHED.   |   |  |   |   |  |  |   |
| 27b. CONTRACT/PURCHASE ORDER INCORPORATES BY REFERENCE FAR 52.212-4, FAR 52.212-5 IS ATTACHED. ADDENDA <input type="checkbox"/> ARE <input type="checkbox"/> ARE NOT ATTACHED.   |   |  |   |   |  |  |   |
| 28. CONTRACTOR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN COPIES TO ISSUING OFFICE. CONTRACTOR AGREES TO FURNISH AND DELIVER ALL ITEMS SET FORTH OR OTHERWISE IDENTIFIED ABOVE AND ON ANY ADDITIONAL SHEETS SUBJECT TO THE TERMS AND CONDITIONS SPECIFIED. |   |  |   | 29. AWARD OF CONTRACT: DATED _____, YOUR OFFER ON SOLICITATION (BLOCK 5), INCLUDING ANY ADDITIONS OR CHANGES WHICH ARE SET FORTH HEREIN, IS ACCEPTED AS TO ITEMS.   |  |  |   |
| 30a. SIGNATURE OF OFFEROR/CONTRACTOR<br>   |   |  |   | 31a. UNITED STATES OF AMERICA (SIGNATURE OF CONTRACTING OFFICER)<br>  |  |  |   |
| 30b. NAME AND TITLE OF SIGNER (Type or print)<br><b>Kemp Howell - Project Manager</b>  |   |  | 30c. DATE SIGNED<br><b>1/9/18</b>       |   | 31b. NAME OF CONTRACTING OFFICER (Type or print)<br><b>Michael C. Fox</b>  |  | 31c. DATE SIGNED<br><b>01/09/2018</b>     |

| 19.<br>ITEM NO. | 20.<br>SCHEDULE OF SUPPLIES/SERVICES   | 21.<br>QUANTITY | 22.<br>UNIT | 23.<br>UNIT PRICE | 24.<br>AMOUNT |
|-----------------|--|-----------------|-------------|-------------------|---------------|
| 0001            | <p>\$51,663.00.</p> <p>This is a Time-and-Materials (T&amp;M) task order with a total ceiling price of \$51,663.00, which the Contractor is not authorized to exceed. The Contractor exceeds at its own risk.</p> <p>The total obligated/funded ceiling amount for this order is currently \$51,663.00. This order is fully funded as detailed in Attachment B Summary of Amounts and Ceilings and Attachment B is hereby incorporated (1 page).</p> <p>Contracting Officer's Representative (COR) for this task order:<br/>Beth Landis, (919)541-2262,<br/>Landis.Elizabeth@epa.gov</p> <p>Alternate COR:<br/>Joann Rice, (919)541-3372, Rice.Joann@epa.gov</p> <p>The services of this order are for severable.<br/>TOCOR: Beth Landis<br/>Period of Performance: 01/10/2018 to 07/08/2021</p> <p>Pre-washing CSN Nylon Filters</p> <p>Accounting Info:<br/>17-E1-53GS-102A04XPM-4183-1853PM8016-001 BFY: 17<br/>Continued ...</p> |                 |             |                   | 51,663.00     |

32a. QUANTITY IN COLUMN 21 HAS BEEN

☐ RECEIVED    ☐ INSPECTED    ☐ ACCEPTED, AND CONFORMS TO THE CONTRACT, EXCEPT AS NOTED: \_\_\_\_\_

|   |                        |                                    |  |                       |
|---|------------------------|------------------------------------|--|-----------------------|
| 32b. SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE          |                        | 32c. DATE                          | 32d. PRINTED NAME AND TITLE OF AUTHORIZED GOVERNMENT REPRESENTATIVE  |                       |
| 32e. MAILING ADDRESS OF AUTHORIZED GOVERNMENT REPRESENTATIVE    |                        |                                    | 32f. TELEPHONE NUMBER OF AUTHORIZED GOVERNMENT REPRESENTATIVE  |                       |
|   |                        |                                    | 32g. E-MAIL OF AUTHORIZED GOVERNMENT REPRESENTATIVE  |                       |
| 33. SHIP NUMBER   | 34. VOUCHER NUMBER     | 35. AMOUNT VERIFIED<br>CORRECT FOR | 36. PAYMENT<br><br><input type="checkbox"/> COMPLETE <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL | 37. CHECK NUMBER      |
| <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL |                        |                                    |  |                       |
| 38. S/R ACCOUNT NUMBER  | 39. S/R VOUCHER NUMBER | 40. PAID BY                        |  |                       |
| 41a. I CERTIFY THIS ACCOUNT IS CORRECT AND PROPER FOR PAYMENT   |                        | 42a. RECEIVED BY (Print)           |  |                       |
| 41b. SIGNATURE AND TITLE OF CERTIFYING OFFICER                  |                        | 42b. RECEIVED AT (Location)        |  |                       |
|   |                        | 42c. DATE REC'D (YY/MM/DD)         |  | 42d. TOTAL CONTAINERS |
|   |                        |                                    |  |                       |

NAME OF OFFEROR OR CONTRACTOR  
AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

| ITEM NO.<br>(A) | SUPPLIES/SERVICES<br>(B)  | QUANTITY<br>(C) | UNIT<br>(D) | UNIT PRICE<br>(E) | AMOUNT<br>(F) |
|-----------------|---|-----------------|-------------|-------------------|---------------|
|                 | Fund: E1 Budget Org: 53GS Program (PRC):<br>102A04XPM Budget (BOC): 4183 DCN - Line ID:<br>1853PM8016-001<br>Funding Flag: Partial<br>Funded: \$51,663.00 |                 |             |                   |               |

## **ATTACHMENT A**

### **Statement of Work**

**Title:** Pre-washing CSN Nylon Filters  
**Contractor:** Amec Foster Wheeler  
**Contract #:** EP-W-16-015  
**Task Order #:** 1013  
**Period of Performance:** 01/10/2018 to 7/08/2018

### **EPA Key Personnel**

#### **Task Order Project Officer (TOPO)/Contract Level Project Officer (PO):**

Beth Landis  
Air Quality Assessment Division (OAR/OAQPS/AQAD)  
Mail Drop C304-06  
Research Triangle Park, NC 27711  
*phone:* (919) 541-2262  
*email:* landis.elizabeth@epa.gov

#### **Alternate TOPO:**

Joann Rice  
Air Quality Assessment Division (OAR/OAQPS/AQAD)  
Mail Drop C304-06  
Research Triangle Park, NC 27711  
Phone: (919) 541-3372  
Email: rice.joann@epa.gov

#### **Contracting Officer (CO):**

Mike Fox  
Contracting Officer  
Administrative Contract Service Center  
1200 Pennsylvania Ave N.W.  
Mail Code 3803R  
Washington DC 20460  
*phone:* (202) 564-2550  
*email:* fox.michael@epa.gov

## STATEMENT OF WORK

### I. INTRODUCTION

The Clean Air Status and Trends Network (CASTNET) is a long-term environmental monitoring network that measures changes in ambient air quality and assesses atmospheric deposition over broad geographic regions of the U.S. (<https://www.epa.gov/castnet>). Operating since 1987, CASTNET has evolved into a robust regional monitoring program which currently consists of approximately 95 monitoring stations nationwide. The Environmental Protection Agency (EPA) coordinates the operation of the network in cooperation with numerous federal, tribal, state and local partners.

The primary monitoring objectives of CASTNET are to:

- Provide high quality data on atmospheric deposition, rural ground level ozone and other forms of atmospheric pollution;
- Support the primary and secondary ozone NAAQS and provide data on NAAQS compliance in rural areas;
- Monitor the status and trends in regional air quality and atmospheric deposition;
- Assess and report on geographic patterns and long-term, temporal trends in ambient air pollution and atmospheric deposition;
- Improve our understanding of PM and ozone formation;
- Validate and improve atmospheric models;
- Provide data for health-based research and epidemiology studies;
- Assess the effectiveness of EPA's emission reduction programs; and
- Support science and ecosystem studies.

CASTNET sites measure weekly average concentrations of sulfate ( $\text{SO}_4^{2-}$ ), nitrate ( $\text{NO}_3^-$ ), ammonium ( $\text{NH}_4^+$ ), sulfur dioxide ( $\text{SO}_2$ ), nitric acid ( $\text{HNO}_3$ ), chloride ( $\text{Cl}^-$ ) and the base cations ( $\text{Na}^+$ ,  $\text{K}^+$ ,  $\text{Mg}^{2+}$  and  $\text{Ca}^{2+}$ ) using a 3-stage filter pack. In addition, each site may make ancillary measurements, including hourly ozone ( $\text{O}_3$ ), hourly meteorology, ammonia ( $\text{NH}_3$ ) gas using passive devices, and trace-level gases. Trace-level gas monitors include reactive oxidized nitrogen ( $\text{NO}_y$ ), nitric oxide ( $\text{NO}$ ), sulfur dioxide ( $\text{SO}_2$ ) and carbon monoxide ( $\text{CO}$ ). CASTNET  $\text{O}_3$ , meteorological, and trace gas measurements follow the requirements in the Code of Federal Regulations (CFR) and EPA's Quality Assurance Handbook.

### II. PURPOSE

The primary purpose of this task order is to pre-wash nylon filters for the Chemical Speciation Network (CSN) and conduct acceptance testing. Once the filters have been washed and pass the CSN acceptance testing criteria, they will be shipped to Wood PLC (formerly Amec Foster Wheeler) for use in the routine network, which functions under a contract between Wood PLC and EPA's OAQPS. The Task Order Project Officer shall provide technical direction for performance of specific tasks under this task order.

### III. CONTRACT LEVEL STATEMENT OF WORK REFERENCE

The tasks to be performed under this task order are consistent with the activities authorized in CLIN 22 of the contract's Statement of Work.

### IV. TECHNICAL DIRECTION

## **1. Prepare a Technical Proposal & Cost Estimate**

The Contractor shall prepare a Task Order Proposal in accordance with the terms and conditions of contract clauses B.2 entitled Fixed Rates for Services – Indefinite delivery/Indefinite quantity contract.

## **2. Pre-wash and acceptance test the Chemical Special Network (CSN) Nylon Filters**

The Contractor shall prewash and acceptance test nylon filters for the Chemical Speciation Network. Wood PLC (formerly Amec Foster Wheeler) shall provide the filters for washing and acceptance testing (procured under the CSN contract). The contractor shall follow the SOP for Cleaning Nylon Filters Used for the Collection of PM<sub>2.5</sub> Material

(<https://www3.epa.gov/ttnamti1/files/ambient/pm25/spec/pm25nyloncleaningsop.pdf>) for cleaning and the Standard Operating Procedure for Procurement and Acceptance Testing of Teflon, Nylon, and Quartz Filters (<https://www3.epa.gov/ttnamti1/files/ambient/pm25/spec/RTIFilterProcurementSOPFINAL.pdf>) for acceptance testing. The cleaned filters must meet EPA's acceptance testing criteria for the CSN, of an average for each cleaning batch that is  $\leq 1$  ug/filter for each ion (chloride, ammonium, sodium, potassium, nitrate and sulfate). Acceptance testing shall occur on 5% of the filters per batch that is cleaned, likely to occur on a weekly basis. We anticipate up to 300 filters will be cleaned on a weekly basis, and acceptance testing results shall be submitted to OAQPS within 7 days of completion of the pre-cleaning and drying. Data shall be summarized and delivered to the CORs in an agreed upon format. The contractor shall provide cleaned filters and acceptance testing results to Wood PLC on a weekly basis for deployment in network. The CSN uses up to 1500 nylon filters per month, and currently has 7000 contaminated MTL filters. Should the CSN switch to a different filter manufacturer that does not require pre-washing, the TOPO shall inform the contractor that there is no longer a need for these services. The maximum number of filters to be pre-washed and acceptance tested under this task is 7000.

## **3. Pre-wash and Acceptance Test Additional CSN Nylon Filters**

Wood PLC has order an additional 4500 nylon filters from a different manufacturer that the network plans to switch to, as long as they meet the acceptance testing criteria outlined in Task 2. Should these filters also be contaminated, the TOPO shall inform the contractor of the need to exercise Task 3 and pre-wash and acceptance test up to 4500 additional filters. The contractor shall follow the same requirements laid out in Task 2. This task shall not begin unless authorized by the TOPO.

## **4. Travel to Meetings**

None anticipated.

# **V. DELIVERABLES AND SCHEDULE**

## **1. Proposal**

The contractor shall deliver a Task Order Proposal in accordance with clause B.7 Task Order Ordering Procedures of the contract. The proposal shall be submitted 10 days after receipt of the SOW.

## **2. Monthly Progress Report**

The contractor shall prepare and submit a monthly progress report by the 15<sup>th</sup> of each month summarizing the progress made, issues encountered or expected, work planned for the next reporting period and costs. These

reports shall comply with contract clauses F.3 Reports of Work and F.5 Monthly Progress Report. Reports shall be delivered electronically.

**Distribution of Deliverables:**

| Addressee                               | Copies |
|---|--------|
| EPA Contracting Officer (Mike Fox)      | 1      |
| EPA Project Officer (Melissa Puchalski) | 1      |
| EPA TOPO (Beth Landis)                  | 1      |
| EPA Alternate (Joann Rice)              | 1      |
| EPA Technical Advisor (Taylor Macy)     | 1      |



**ATTACHMENT B**  
**SUMMARY OF TASK ORDER OBLIGATION/CEILING AMOUNTS**

| Total Funding/Obligation Amounts |                 |                    |                    |
|----------------------------------|-----------------|--------------------|--------------------|
| Period                           | Previous Amount | This Action        | Amount             |
| Base Period                      | -               | \$51,663.00        | \$51,663.00        |
| <b>Total</b>                     | -               | <b>\$51,663.00</b> | <b>\$51,663.00</b> |

| Total Task Order Ceiling |                 |                    |                    |
|--------------------------|-----------------|--------------------|--------------------|
| Period                   | Previous Amount | This Action        | Amount             |
| Base Period              | -               | \$51,663.00        | \$51,663.00        |
| <b>Total</b>             | -               | <b>\$51,663.00</b> | <b>\$51,663.00</b> |

**Note:** This task order is incrementally funded in accordance with contract clause B.5 Limitation of Government's Obligation (EPA-B-32-103).

|  |   |                   |  |   |  |                                |  |
|--|---|-------------------|--|---|--|--------------------------------|--|
| <b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>  |   |                   |  | 1. CONTRACT ID CODE   |  | PAGE OF PAGES                  |  |
|  |   |                   |  |   |  | 1      2                       |  |
| 2. AMENDMENT/MODIFICATION NO.  |   | 3. EFFECTIVE DATE |  | 4. REQUISITION/PURCHASE REQ. NO.  |  | 5. PROJECT NO. (If applicable) |  |
| P00001   |   | See Block 16C     |  |   |  |                                |  |
| 6. ISSUED BY   |   | CODE              |  | 7. ADMINISTERED BY (If other than Item 6)   |  | CODE                           |  |
| HPOD   |   |                   |  |   |  |                                |  |
| US Environmental Protection Agency<br>William Jefferson Clinton Building<br>1200 Pennsylvania Avenue, N. W.<br>Mail Code: 3803R<br>Washington DC 20460   |   |                   |  |   |  |                                |  |
| 8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)  |   |                   |  | (x)   |  |                                |  |
| AMEC ENVIRONMENT & INFRASTRUCTURE, INC.<br>Attn: LISA DWYER<br>AMEC FOSTER WHEELER ENVIRONMENT & I<br>751 ARBOR WAY, STE 180<br>(b)(4)<br>BLUE BELL PA 194221960   |   |                   |  |   |  |                                |  |
|  |   |                   |  | 9A. AMENDMENT OF SOLICITATION NO.   |  |                                |  |
|  |   |                   |  | 9B. DATED (SEE ITEM 11)   |  |                                |  |
|  |   |                   |  | x 10A. MODIFICATION OF CONTRACT/ORDER NO.<br>EP-W-16-015<br>1013  |  |                                |  |
|  |   |                   |  | 10B. DATED (SEE ITEM 13)<br>01/10/2018  |  |                                |  |
| CODE 038086125   |   | FACILITY CODE     |  |   |  |                                |  |
| <b>11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS</b>   |   |                   |  |   |  |                                |  |
| <input type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers <input type="checkbox"/> is extended. <input type="checkbox"/> is not extended.<br>Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified. |   |                   |  |   |  |                                |  |
| 12. ACCOUNTING AND APPROPRIATION DATA (If required)  |   |                   |  | Net Decrease:   |  | -\$12,578.64                   |  |
| See Schedule   |   |                   |  |   |  |                                |  |
| <b>13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.</b>   |   |                   |  |   |  |                                |  |
| CHECK ONE  | A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.  |                   |  |   |  |                                |  |
|  | B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b). |                   |  |   |  |                                |  |
|  | C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:  |                   |  |   |  |                                |  |
| X  | D. OTHER (Specify type of modification and authority)<br>FAR 52.232-22 Limitation of Funds  |                   |  |   |  |                                |  |
| <b>E. IMPORTANT:</b> Contractor <input checked="" type="checkbox"/> is not. <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.  |   |                   |  |   |  |                                |  |
| 14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)  |   |                   |  |   |  |                                |  |
| DUNS Number: 038086125   |   |                   |  |   |  |                                |  |
| The purpose of this modification is to de-obligate funding in the amount of \$12,578.64 from this task order.  |   |                   |  |   |  |                                |  |
| TOCOR: Beth Landis   |   |                   |  |   |  |                                |  |
| LIST OF CHANGES:   |   |                   |  |   |  |                                |  |
| Reason for Modification: Funding Only Action   |   |                   |  |   |  |                                |  |
| Obligated Amount for this Modification: -\$12,578.64   |   |                   |  |   |  |                                |  |
| New Total Obligated Amount for this Award: \$39,084.36   |   |                   |  |   |  |                                |  |
| CHANGES FOR LINE ITEM NUMBER: 1  |   |                   |  |   |  |                                |  |
| Obligated Amount for this Modification: -\$12,578.64   |   |                   |  |   |  |                                |  |
| Continued ...  |   |                   |  |   |  |                                |  |
| Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.  |   |                   |  |   |  |                                |  |
| 15A. NAME AND TITLE OF SIGNER (Type or print)  |   |                   |  | 16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)  |  |                                |  |
|  |   |                   |  | Michael C. Fox  |  |                                |  |
| 15B. CONTRACTOR/OFFEROR  |   | 15C. DATE SIGNED  |  | 16B. UNITED STATES OF AMERICA   |  | 16C. DATE SIGNED               |  |
| (Signature of person authorized to sign)   |   |                   |  | <br>(Signature of Contracting Officer) |  | 10/24/2018                     |  |

|                           |   |      |    |
|---------------------------|---|------|----|
| <b>CONTINUATION SHEET</b> | REFERENCE NO. OF DOCUMENT BEING CONTINUED | PAGE | OF |
|                           | EP-W-16-015/1013/P00001                   | 2    | 2  |

NAME OF OFFEROR OR CONTRACTOR

AMEC ENVIRONMENT & INFRASTRUCTURE, INC.

| ITEM NO.<br>(A) | SUPPLIES/SERVICES<br>(B)  | QUANTITY<br>(C) | UNIT<br>(D) | UNIT PRICE<br>(E) | AMOUNT<br>(F) |
|-----------------|---|-----------------|-------------|-------------------|---------------|
|                 | <p>Incremental Funded Amount changed from \$0.00 to \$39,084.36</p> <p>FOB changed from Destination to</p> <p>CHANGES FOR ACCOUNTING CODE:<br/>17-E1-53GS-102A04XPM-4183-1853PM8016-001</p> <p>Amount changed from \$51,663.00 to \$39,084.36</p> <p>Payment:</p> <p>RTP Finance Center<br/>US Environmental Protection Agency<br/>RTP-Finance Center (AA216-01)<br/>109 TW Alexander Drive<br/>www2.epa.gov/financial/contracts<br/>Durham NC 27711</p> <p>Period of Performance: 01/10/2018 to 07/08/2021</p> |                 |             |                   |               |